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Diagnostic Lung Biopsy: Indications and Limitations*

• When extensive diagnostic study yields no answer in pulmonary disease, lung biopsy is effective in providing an exact diagnosis.

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THE patient with bilateral diffuse pulmonary disease can present a challenging diagnostic problem to the physician. In most patients, an accurate diagnosis can be made without difficulty after careful history, physical examination and proper execution of laboratory procedures. However, in a substantial number of instances, the etiology of the lesion remains equivocal. A specific histologic diagnosis becomes necessary if an accurate prognosis is to be given or intelligent treatment planned.

Traditionally the management of this problem has been a medical one, and diagnosis has rested largely on roentgenographic interpretation, skin-testing and other less valuable indirect methods. All too often the diagnosis cannot be made until postmortem examination, and treatment is largely on an empiric basis. More recently, the demonstration of effectiveness of the steroids and other chemotherapeutic agents has awakened an interest in more specific methods of diagnosis. The medico-legal implications of industrial pneumoconioses have further underscored the importance of early and exact anatomic diagnosis.

Other Methods

Needle biopsy of the lung has been used for years, but has understandably never gained wide acceptance. It is a blind, inexact method which has obvious dangers despite its apparent simplicity. Scalene node biopsy is a valuable adjunct in the diagnosis of obscure pulmonary disease. It has largely been an effective measure in cases of sarcoidosis and metastatic carcinoma. Biopsy of the scalene lymph nodes can reveal only disease which reflects itself in this area, and a significant number of diffuse pulmonary diseases are not generally reflected by scalene node extension. However, this should certainly be used prior to any more aggressive procedure.

The careful collection and study of sputa, skin-testing, standard laboratory serological examinations and scalene node biopsy are all to be considered in working up a patient before contemplating direct lung biopsy. However, if these measures fail, then lung biopsy in the region of maximal x-ray involvement is certainly

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 4, 1960, in Baton Rouge.

the next step. A standard thoracotomy incision cannot be considered a minor procedure for simple diagnosis, and is unacceptable in the patient with markedly impaired pulmonary function. The technique for lung biopsy having a wide margin of safety with the effectiveness of direct tissue biopsy would therefore seem ideal.

Technique

This approach to the problem was first described and utilized by Classen in 1949, and has been expanded and modified by others since. A limited anterior or (Figure 7) anterolateral intercostal incision is used, generally with the patient in supine position and under endotracheal anesthesia. Lung re-inflation is then controllable, and a small intercostal tube on water-sealed drainage is all that is necessary for the immediate postoperative period. This technique is considerably less radical than the conventional exploratory thoracotomy, and permits the collection of sufficient tissue for histopathologic, chemical and bacteriologic analysis. It is extremely well-tolerated, even by poor-risk elderly patients. In the author's small series there has been no attendant morbidity or mortality, and reports of larger series by Effler and others are in agreement.

Case Histories

Patient L.W.—A 52 year old white shipyard worker, who had been employed for approximately twenty years as an asbestos pipe wrapper. When first seen, he complained of increasing cough and expectoration over a period of four years. He had had frequent upper respiratory infections associated with bilateral anterior pleuritic pain, and recent development of dyspnea on exertion.

A routine chest film (Figure 1) showed bi-

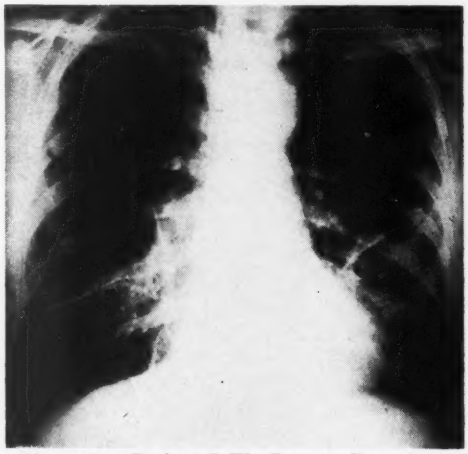

Figure 1.—Patient L.W. Proven disseminated asbestosis by lung biopsy.

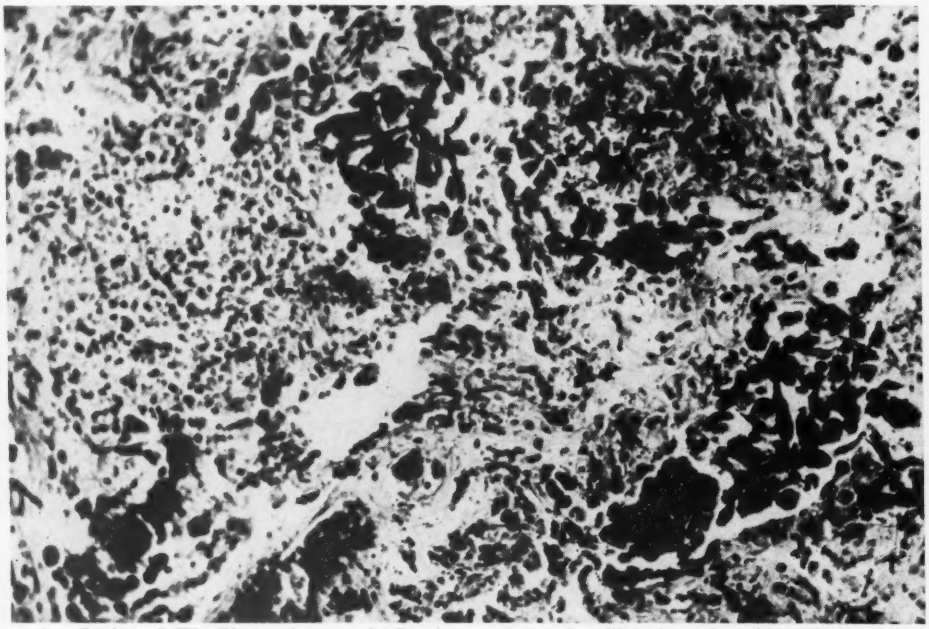

Figure 2.—Patient L.W. Photomicrograph showing perivascular fibrosis and typical asbestos spirules.

lateral parahilar infiltration within both lower lobes and evidence of anterior pleural thickening. Bronchoscopy was negative, and bronchography showed restriction of the left lower lobe with moderate cylindrical bronchiectasis in the basal segments of both lower lobes. A scalene node dissection on the left side was negative.

Lung biopsy was carried out through a 7 cm. left inframammary intercostal incision. The entire left lung was granular with marked visceral pleuritis, chiefly involving the left lower lobe and lingula. A small wedge lung biopsy was taken which showed refractile asbestos bodies scattered throughout the biopsy specimen, with interstitial fibrosis and perivascular thickening characteristic of pulmonary asbestosis. (Figure 2)

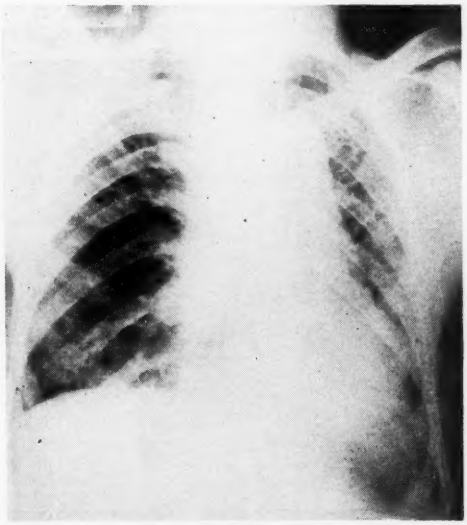

Figure 3.—Patient A.H. Hamman-Rich disease. Proven by lung biopsy.

Patient A.H.—A 68 year old colored male who had worked as a laborer in a refinery for the previous twenty-eight years, with no known exposure to significant pulmonary irritants. Over a period of three years, he was found to demonstrate a progressive nodular infiltrative process within the left lung, with slow development of honey-combing throughout the left lung and a similar process within the apex of the right lung. (Figure 3) This rapidly became associated with dyspnea on exertion, weight loss, cough and intermittent hemoptysis. Exhaustive studies of his sputa were negative for cytology or tuberculosis. Bronchoscopy was normal. A bilateral scalene node dissection was negative. A lung biopsy was carried out through a small left inframammary intercostal incision, and histologic study revealed extensive perivascular fibrosis and a picture characteristic of Hamman-Rich syndrome. (Figure 4) This patient was treated with steroids, but developed progressive pulmonary insufficiency and died several months later.

Patient G.S.—A 34 year old housewife who, since the age of 22 years, had been suspected of having pulmonary tuberculosis because of the slowly progressive development of fibrocavitary

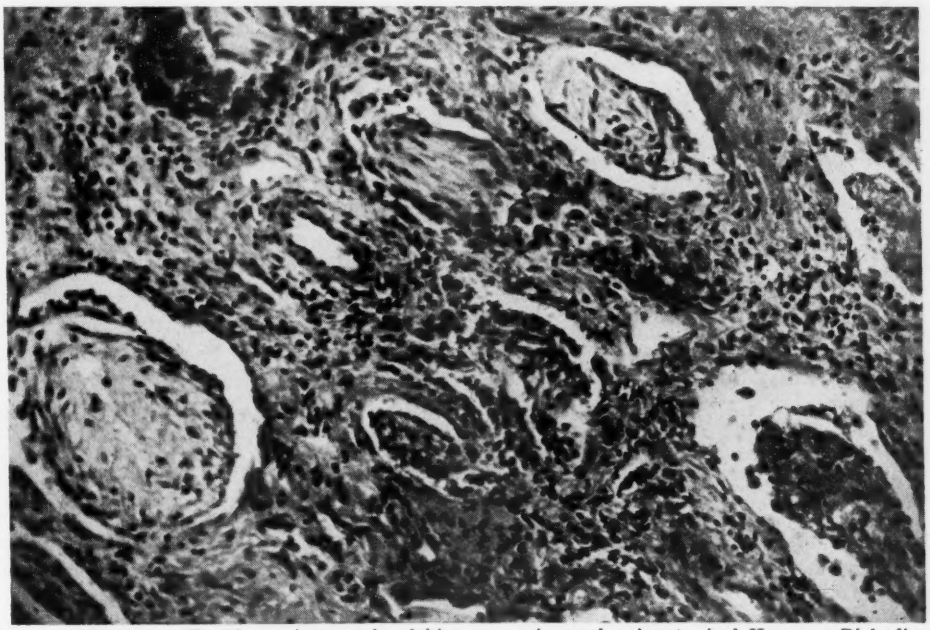

Figure 4.—Patient A.H. Photomicrograph of biopsy specimen showing typical Hamman-Rich disease.

infiltrative disease within both apices. Ten years earlier an isolated positive smear for tuberculosis was obtained in another state, and she was hospitalized for three years in a tuberculosis sanatorium. Throughout this time a positive culture was not obtained, but she was given a full course of antibiotic therapy and discharged. She developed increasing cough, dyspnea, clubbing of the fingers and frequent upper respiratory infections. Her PPD #1 was positive, but repeated studies of her sputa for tuberculosis were negative.

She was readmitted to a tuberculosis sanatorium in 1953 for one year, with symptomatic improvement but no regression of her lesion seen on x-ray. (Figure 5) A bilateral scalene

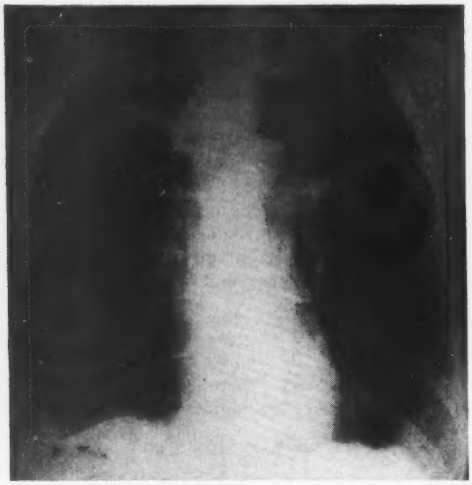

Figure 5.—Patient G.S. Sarcoidosis with extensive fibrosis and cavitation.

node dissection was performed elsewhere, and these were both reported to be negative. A lung biopsy was performed through a limited inframammary left intercostal incision, with histologic findings typical of Boeck's sarcoid.

Patient A.M.—A 38 year old married female who was admitted to the Greenwell Springs Hospital with a bilateral extensive nodular infiltrate, weight loss of ten pounds and an increase in her cough over a period of twelve months. During a hospitalization period of four months, repeated sputa were negative on smear and culture for acid-fast. Her PPD #2 was weakly positive. Bronchoscopy was negative. It was felt that she might have sarcoidosis, and a bilateral scalene node dissection was performed and negative findings obtained. A small lung biopsy was obtained through a 6 cm. left inframammary intercostal incision, and histologic findings characteristic of pulmonary tuberculosis were found. This patient was then subsequently treated with chemotherapy, with progressive improvement and resolution of her findings. (Figure 6).

Summary

Many cases of diffuse bilateral pulmonary disease cannot be diagnosed, despite extensive diagnostic study. Direct pulmonary biopsy is recommended for these cases. It can be accomplished through a small anterior or anterolateral intercostal incision, allowing the surgeon an opportunity to examine the lung and pleura and select an area for biopsy. The tissue specimen so obtained is large enough to allow complete study by pathologic, bacteriologic and chemical methods. The proper use of this procedure can avoid prolonged and costly hospitalization or confinement in a sanitorium. It carries a negligible morbidity, and usually does not require more than four to five days of hospitalization. Its effectiveness in providing for accurate diagnosis has been demonstrated in a series of 12 cases that were not diagnosed by other conventional simpler methods. (Table 1)

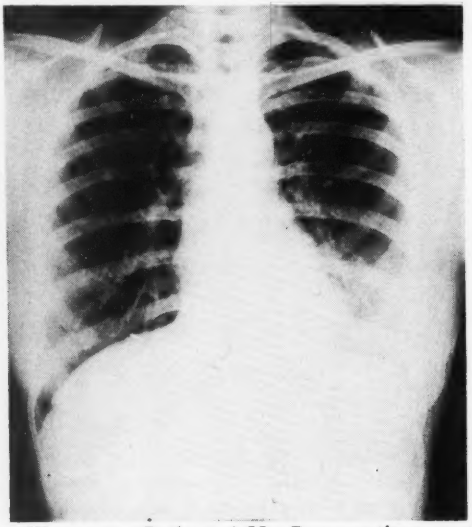

Figure 6.—Patient A.M. Preoperative x-ray showing bilateral nodular infiltration. Proven to be tuberculosis by lung biopsy.

Discussion

Dr. C. A. Waggenspack, Jr. (Baton Rouge): Some day I would like to slip the type-setter a couple of good cigars and get him to transpose the headings on the medical and surgical sec-

TABLE 1
LUNG BIOPSY FINDINGS IN 12 CONSECUTIVE CASES

Patient	Age-Sex	Clinical Diagnosis	Histologic Diagnosis
A.H.	M—68	Pneumoconiosis	Hamman-Rich Syndrome
A.C.	F—38	Pulmonary Tbc.	Sarcoidosis
J.S.	M—40	Pulmonary Tbc.	Non-specific Fibrosis
A.T.	M—45	Sarcoidosis	Lipoid Pneumonitis
F.J.	F—58	Sarcoidosis	Sarcoidosis
H.C.	M—30	Lymphoma	Sarcoidosis
A.R.	M—64	Pulmonary Tbc.	Bronchogenic Carcinoma
M.R.	F—37	Lymphoma-Sarcoid	Sarcoidosis
L.W.	M—52	? Pneumoconiosis	Asbestosis
G.S.	F—34	Pulmonary Tbc.	Sarcoidosis
A.M.	F—38	Pulmonary Tbc.	Pulmonary Tbc.
T.D.	F—34	Pulmonary Fibrosis	Pulmonary Tbc.

tions in the program. I like to think that something of value to surgeons is going on in the current medical meetings, and certainly, this paper should be brought to the attention of the

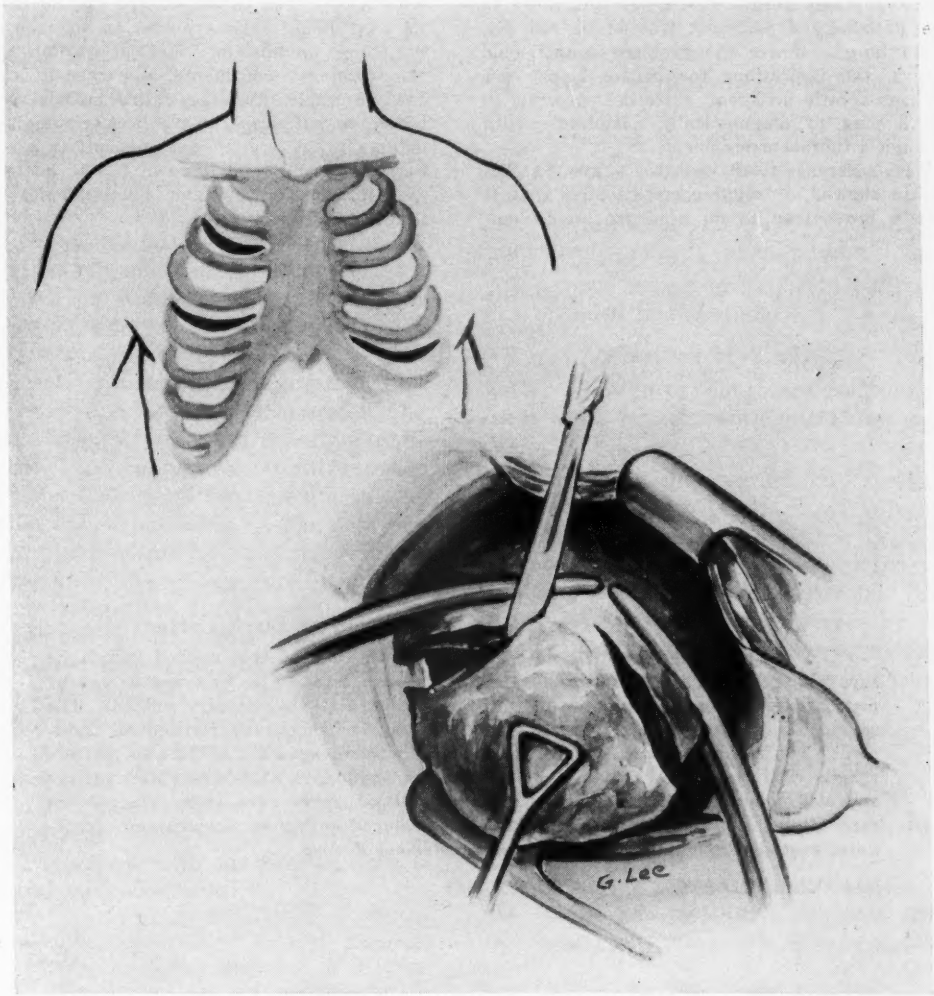

Figure 7.—Schematic outline of usual incisional sites and technique of wedge biopsy.

internists and family physicians.

Most surgeons are already aware that the procedure can be done with minimal risk and admittedly has considerable diagnostic merit, but many of the medical specialists are unaware of the facility with which lung biopsy can be performed. Actually, Dr. Beskin probably treated needle biopsy a little more gently than it deserved, although not necessarily for the same reasons (seeding of malignant cells is probably not much of a greater threat through a needle opening than through a thoracentesis). For one thing, unless the diseased lung is solid and fixed to the chest wall, the risk of tearing up lung tissue is great. Furthermore, in a nodular type of infiltrate, the chances of getting the needle to enter the nodule rather than the surrounding tissue is small. (I can even remember a couple of embarrassing occasions at Charity where even at thoracotomy normal tissue was sent down to the Pathology department instead of the diseased lung). Where the problem is thickened pleura, the indications for needle biopsy are perhaps a little different, since it is possible to get a plug of diagnostically adequate pleura through a thoracentesis needle.

With reference to the specific x-rays that Dr. Beskin showed, I would comment first that it took a brave man to do a biopsy on an emphysematous patient whose only complaint was shoulder pain, but there is no arguing with success, and it seems, in retrospect, that the procedure was well justified.

With reference to the two possible sarcoid patients, probably most of the internists in the audience would have reversed their initial impressions, that is, the patient who was thought to have sarcoid would have been considered probably not to have, and vice versa. Some mention should be made that in sarcoid the scalene node is not the only diagnostic technique of sufficient validity to render an open thoracotomy unnecessary—that is, if a patient has a positive splenic biopsy or liver biopsy and an undiagnosed lung condition, it is probably not necessary to reassert the diagnosis by means of open thoracotomy.

Finally, as Dr. Beskin made clear, the facility with which open thoracotomies can be done in no way should be interpreted as an excuse for not doing an adequate medical workup before thoracotomy is considered, and when it is done, I voice a plea for the entire medical group, please do not drop the whole specimen in formalin. Cut it in half, put one half in a sterile Petri dish, and send it down to the bacteriologist for maceration and bacteriological and fungus evaluation.

Treatment of Metrorrhagia by Infusion of Black Coffee

Dr. Desprès (Abeille Médicale) recommends the use of this method, which he says has succeeded with him already in three severe cases. The first was a case of metrorrhagia following confinement, which had resisted all the ordinary methods. The second was a case of metrorrhagia due to anemia. It had equally resisted all treatment. The third case was observed in a young woman, aged 26, subject to metrorrhagia, recurring every fifteen days and lasting eight days at a time. Rest in bed and cold compresses had not produced any result. Desprès gave from three to six cups of strong coffee daily. In this dose, it produced agitation, sleeplessness, sometimes even a sort of intoxication.—**London Medical Record.**

New Orleans M. & S. J. 7:1130 (June) 1880.

Cholecystography

• In this thorough study of 543 patients, the author gives results and statistics on points that are important both to the radiologist and the clinician in securing an adequate cholecystogram.

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"THE methods of skiagraphy are useless for the routine detection of gall stones, and those who have tried the method extensively are the most convinced of its uselessness for this purpose." [2] (1907)

"A negative radiographic report is of no value, because it is not possible to demonstrate all cases of gall stones." [1] (1920)

It is fortunate for the medcial profession and the public in general that Graham, Cole and Copher, in 1924, were able to initiate a movement that would entirely change the above pessimism to one of extreme optimism, and a diagnostic accuracy to one of 97.3 per cent correctness.[3-9] This was accomplished through the development of contrast media for cholecystography.

The early attempts at cholecystography were crude and laborious compared to the relative ease and safety of present examinations. The first test was an intravenous test using 350 cc. of the calcium salt of tetrabromphenophthalein.[4] The obvious disadvantage of an I.V. test, large dose-volume and severe reactions prompted rapid investigations for newer and better contrast media. An array of compounds were tested and tried. The calcium salt above was replaced by the sodium salt which was more soluble and stable, thereby decreasing the dose to 35 to 40 cc. It was necessary to fractionate this dose in two injections—an obvious disadvantage. Improvement followed improvement in rapid succession until our present simplified oral method evolved.

* Resident in Radiology, Charity Hospital, New Orleans, La. Data collected at Charity Hospital, New Orleans, La. and sponsored by research grant from Winthrop Laboratories, N. Y.

Purpose of Study

This is a study of our present-day method. The original purpose of the study was to evaluate a new experimental contrast medium (herein called Cpd. X) for possible general use, as well as Telepaque and Orabilex (Bunamiodyl).†

Also to evaluate all contrast media for:

1. Side reactions
2. Degree of opacification of the gallbladder
3. Presence or absence of calculi
4. Visualization of ducts
5. Residual in bowel
6. Significance of "poorly visualized" and "nonvisualized" examinations.

A general survey of gallbladder disease was included in the study.

Method of Study

(A) Only in-patients were used so that there could be accurate control over dosage.

(B) All patients (except one) received 6 tablets Telepaque (3 Gm.) or 6 capsules Orabilex (4.5 Gm.) or 6 tablets Cpd. X, in rotation, the evening prior to the examination at approximately 6:00 P.M. This was personally administered by the author. One patient was 9 years, weighed 54 lbs. and received 3 tablets Telepaque and got excellent visualization.

(C) A non-fat evening meal was allowed on the day preceding the examination. However, patients were placed on NPO (nothing per os) following administration of contrast medium.

(D) On arrival at x-ray department the following morning, patients were questioned regarding side effects and ap-

† Orabilex for this study supplied by E. Fougera and Co., Inc.

propriate films were obtained. Early in the study radiographs were made in the prone and erect positions with adequate coning where indicated and the films promptly examined. However, this was time-consuming and caused much patient delay in the department. This was shortly replaced by immediate fluoroscopy in the erect position as the initial step in examination. If the gallbladder failed to visualize, a prone PA view of the abdomen on 14″ by 17″ film was obtained. If the gallbladder visualized satisfactorily, spot films were made at fluoroscopy with and without the pressure cone insuring that at least one erect film of the gallbladder was completely free of obscuring intestinal gas or residual contrast medium. In those patients unable to stand erect because of illness, a right lateral decubitus view was taken. No examination was called negative unless there was at least one erect or right lateral decubitus film free of gas which showed no pathology. This is a *sine qua non* to a good examination. Numerous cases were encountered in the series in which very small, radiolucent stones were almost invisible in the recumbent, prone position but "layered out" and became distinctly obvious on an erect or decubitus film.

A scout PA of the abdomen on 14″ by 17″ was then made to check for residual opaque material in the bowel. This was followed by a commercially prepared fatty meal and a coned down PA of the gallbladder in the prone position after an interval of thirty minutes.

Results of Study

The numbers of patients examined are listed in Table 1. At the request of the producer, it was elected to discontinue the study of Cpd. X after 93 cases had been examined.

TABLE 1
PATIENTS EXAMINED

	Cpd. X	Telepaque	Orabilex	Total
Number of Patients Examined	93	269	181	543

The sex, age and weight distributions are listed in Table 2.

A total of 543 patients were examined of whom 68.7 per cent were females reflecting the clinician's higher index of suspicion of gallbladder disease in women.

The side reactions were, in general, of mild severity and, in many cases, nothing more than a continuation of the exact symptoms and distresses for which the patient was initially admitted to the hospital and which had existed prior to ingesting the contrast medium. In no instance was a severe side reaction en-

TABLE 2
SEX, AGE, AND WEIGHT DISTRIBUTION

		Cpd. X	Telepaque	Orabilex	Total
Sex	Men	29	86	55	170
	Women	64	183	126	373
Age in Years	0-20	1	7	3	11
	20-30	4	21	16	41
	30-40	15	41	26	82
	40-50	21	57	32	110
	50.60	22	56	42	120
	60-70	15	57	37	109
	70-80	9	23	17	49
	over 80	6	7	8	21
Weight in Pounds	50-99	6	14	7	27
	100-120	17	43	34	94
	121-140	23	66	43	132
	141-160	19	63	44	126
	161-180	15	46	33	94
	181-200	9	20	10	39
	over 200	4	17	10	31

countered. The "diarrheas" were usually mild, consisted of one or two semi-liquid stools, were self-limited and actually beneficial in that they cleansed the colon to some extent of copious gas and fecal material which are a hindrance to proper examination. (Table 3)

Of all the various side effects, perhaps the most annoying and troublesome to the patients were the three cases of "rash" which occurred. These consisted of a generalized, maculopapular, urticarial reaction associated with itching and general malaise. This was short lived, however, and disappeared fairly rapidly with no sequelae.

Also, it must be remembered that all persons examined were hospitalized patients. The patient's complaints, many of which I am sure are reflected in the side reactions, were such as to prompt admission to the hospital for work-up rather than on an out-patient basis.

Table 4 lists the degree of opacification of the gallbladder. This was interpretated by an observer unfamiliar with which contrast medium the patient had received.

Visualization of the ducts is tabulated in Table 5. The figures are percentages of duct visualization per the sum of the "fair", "good" and "excellent" opacifications for obvious reasons. In almost every case, duct visualization was on the film made following stimulation with a fatty

TABLE 3
SIDE REACTIONS

	Bergeron						Meszaros, Rich [14]	Tice [19]	Bickham, Wissler, Schumacher, Miele [15]		Whitehouse, Fink [17]
	Cpd. X 93 Cases 6 Tabs.		Telepaque 269 Cases 3 Gm.		Orabilex 181 Cases 4.5 Gm.		Orabilex 500 Cases 4.5 Gm.	Orabilex 152 Cases 4.5 Gm.	Orabilex 350 Cases 4.5 Gm.		Orabilex 500 Cases 4.5 Gm.
	No.	Per Cent	No.	Per Cent	No.	Per Cent	Per Cent	Per Cent	No.	Per Cent	Per Cent
None	66	71	156	58	108	59.7	63		259	70	74
Nausea											
Mild	15	16.1	55	20.4	21	11.5					
Moderate	1	1.1	5	2.2	8	4.4					
Severe	0		0		0						
Total	16	17.2	60	22.3	29	16	14	17	39	11	11
Vomiting											
Mild	3	3.2	8	2.9	0						
Moderate	0		1	0.4	0						
Severe	0		0		0						
Total	3	3.2	9	3.3	0		4	3	22	6	1
Diarrhea											
Mild	6	6.4	29	10.8	26	14.4					
Moderate	1	1.1	16	6	8	4.4					
Severe	0		0		0						
Total	7	7.5	45	16.7	34	18.8	4	2	15	4	3
Dysuria											
Mild	3	3.2	8	2.9	0						
Moderate	0		3	1.1	0						
Severe	0		0		0						
Total	3	3.2	11	4.1	0		2		12	3.4	3
Cramps											
Mild	6	6.4	40	14.8	21	11.5					
Moderate	1	1.1	8	2.9	7	3.9					
Severe	0		0		0						
Total	7	7.5	48	17.8	28	15.5	4	1.4			4.4
Other	1	1.1	0		2	1.1	1		3	<1	11

TABLE 4
DEGREE OF OPACIFICATION OF THE GALLBLADDER

	Cpd. X		Telepaque		Orabilex		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Non visualized	32	34.4	69	25.7	35	19.3	136	25
Poor visualization	13	14	13	4.8	7	3.9	33	6.1
Fair visualization	12	12.9	31	11.5	10	5.5	53	9.8
Good visualization	22	23.7	66	24.5	40	22.1	128	23.6
Excellent visualization	14	15.1	90	33.5	89	49.1	193	35.5

TABLE 5
DUCT VISUALIZATION

	Cpd. X	Telepaque	Orabilex	Total
Faint	7	26	11	44
Good	5	22	25	52
Excellent	0	6	13	19
Total	12 (25%)	54 (28.9%)	49 (35.2%)	115 (30.7%)

meal. It might be added here that in no instance did the film made following the fatty meal "discover" a pathologic entity that was not present on the preliminary films. In the patient with papillomas, however, they were more clearly visualized on the film made with the gallbladder in the contracted state. The ducts visualized were mainly the cystic and common bile ducts. Occasionally, the common hepatic duct would faintly visualize.

Residual Contrast Medium

Residual contrast medium in the colon which has remained unabsorbed is rarely of consequence if the gallbladder visualized. Usually, by proper fluoroscopic technique with a compression cone, the gallbladder can be separated from intestinal gas and residual contrast medium. In one instance, however, the residual contrast medium obscured the gallbladder in all projections necessitating a repeat examination but this is the exception rather than the rule. More important (see Table 6b), residual barium in the colon from previous G.I. series or barium enema complicates a satisfactory cholecystogram. It is urged that in elective work-ups for suspected G.I. or biliary disease that the cholecystogram be given preference. In urgent cases the most pertinent examination should come first. Occasionally, an unsuspected obstructing lesion involving the distal stomach will be diagnosed at the time of cholecystography by the fact that most of the contrast medium has remained in the stomach overnight.

Stones and Other Pathology

Sixty-six cases of stones were demonstrated of which 73 per cent were radiolucent upholding the well known fact that the majority of stones are not visible on

TABLE 6a
RESIDUAL CONTRAST MEDIUM

	Cpd. X	Telepaque	Orabilex	Total
Minimal	13	66	29	108
Moderate	20	40	12	72
Dense	15*	12†	5	32
Total	48 (51.6%)	118 (43.9%)	46 (25.4%)	212 (39.1%)

*3 in stomach from obstructing lesions.
†2 in stomach from obstructing lesions.

TABLE 6b
FREQUENCY WITH WHICH RESIDUAL BARIUM FROM PREVIOUS INTESTINAL STUDIES COMPLICATED CHOLECYSTOGRAPHY

Cpd. X	Telepaque	Orabilex	Total
14	37	34	85 (15.7%)

TABLE 7
STONES AND OTHER PATHOLOGY DEMONSTRATED

		Cpd. X	Telepaque	Orabilex	Total
Stones	Radio opaque	2	10	6	18
	Radiolucent	6	23	19	48 (73%)
Calcified Gallbladder		0	1	0	1
Papillomas		0	0	1	1

plain "scout" films of the right upper quadrant of the abdomen.

The one case with papillomas was distinguished and correctly diagnosed preoperatively by the fact that the small radiolucent areas in the gallbladder shadow at the time of cholecystography were constant in position and did not move with changes in body position.

Failure to Visualize

Of extreme importance to the clinician is the problem of what to do with a patient whose gallbladder fails to visualize on a properly performed cholecystogram or visualizes poorly. To answer this problem all hospital charts pertaining to these patients were reviewed and summarized in tables 8a and 8b.

TABLE 8a
FOLLOW-UP OF POORLY VISUALIZED GALLBLADDERS

	Cpd. X	Telepaque	Orabilex	Total
Total cases	13	13	7	33
Examination not repeated	7	6	3	16
Examination repeated with double dose of same medium and still unsatisfactory	1	0	0	1
Examination repeated with double dose and stones demonstrated	1	1	0	2
Examination repeated with satisfactory visualization and no pathology	2	4	1	7
Disease of liver complicating examination	1*	1†	0	2
Other	0	1‡	2§	3
Examination repeated with single dose of other contrast medium and stones demonstrated	1	0	1	2

* Hepatitis.
† Congenital polycystic disease of liver.
‡ Uremia with chronic pyelonephritis, BUN of 176 mgm. %
§ Carcinoma of gallbladder; sarcoma of stomach and cholelithiasis.

By review of Table 8a it is seen that a repeat examination was of considerable diagnostic importance in 11 cases—either pathology was demonstrated or a better visualization was obtained establishing a negative study.

Many factors can account for poor visualization or nonvisualization:

(a) Primary gallbladder disease (stones, cholecystitis, carcinoma, hydrops, empyema, etc.)

(b) Obstruction to cystic duct

(c) Primary liver disease (hepatitis, liver failure, metastases, etc.)

(d) Lack of absorption of contrast medium (G.I. tract disturbances, gastroenteritis, retention in stomach or large duodenal diverticulum)

(e) Vomiting of contrast medium

(f) Failure to take contrast medium

(g) Inadequate dose of contrast medium

(h) Eating fatty foods or other gallbladder stimulants after taking contrast medium

Failure of a gallbladder to visualize during a properly performed and regulated oral cholecystogram is almost invariably indicative of gallbladder disease if the other factors such as (c), (d), (e), (f), (g), and (h) above are excluded. However, one must bear in mind that there are sporadic cases of nonvisualization which do get excellent visualization at a later date using the same dose of the same contrast medium and all other factors being equal. For this reason and because of a high yield of diagnostic information obtained, it is recommended that all cases of poor or nonvisualization by the oral tests be repeated at a later date.

In Table 8b it is again noted that repeat examinations were important in 14 cases (7 were subsequently negative and 7 showed stones). Excluding the 3 patients who had prior cholecystectomies, those with no follow-up and those with disease of the liver or other organs which, per se, were responsible for nonvisualization, 49 cases of primary gallbladder and biliary pathology were found at surgery out of a total of 49 cases or 100 per cent. Thus, the clinician should be aware of the high incidence of pathology expected to be present when a patient has a nonvisualized gallbladder by oral tests and extra-biliary factors previously enumerated have been excluded. The patients who had previous cholecystectomies were examined in an attempt to visualize the ducts only and all three were unsuccessful.

TABLE 8b
FOLLOW-UP OF NONVISUALIZED GALLBLADDERS

Total cases	Cpd. X 32	Telepaque 69	Orabilex 35	Total 136
No follow-up	11	26	15	52
Lesions obstructing G.I. tract	3	0	0	3
Examination repeated with same medium and stones found	0	3*	3	6
Had subsequent surgery and stones and/or chronic cholecystitis proven	8	22	16	46
Had repeat examination with satisfactory visualization and no pathology found	4	3	0	7
Carcinoma of gallbladder or bile ducts	0	2	0	2
Primary liver disease (hepatitis, cirrhosis, etc.)	1	7	0	8
Previous cholecystectomy	2	1	0	3
Acute pancreatitis	1	1	0	2
Carcinomatosis with liver metastases	1	4	0	5
Other	1‡	2†	1§	4

* Two of which are included in category just below.

† (1) Suspected hepatoma; refuses surgery.
(2) Repeatedly vomited Telepaque due to psychogenic overlay—kept down Orabilex and stones demonstrated.

‡ Radio opaque stone seen on KUB.

§ Had surgery and chronic cholecystitis without stones found.

In all, the pathology encountered in this series was five times more frequent in women than men.

Summary

(A) Experience with three contrast media for oral cholecystography is discussed.

(B) A *sine qua non* to an adequate cholecystogram is at least one erect or right lateral decubitus film of the gallbladder completely free of intestinal gas or residual contrast medium.

(C) Side effects encountered are analyzed.

(D) The degree of opacification of the gallbladder is tabulated and reasons for poor visualization and nonvisualization are tabulated.

(E) Approximately 73 per cent of all gall stones are radiolucent in type.

(F) A poorly visualized or nonvisualized gallbladder should have a repeat cholecystogram because of the high incidence of valuable diagnostic information gained.

(G) Factors other than primary gallbladder disease are mentioned which, in themselves, can cause unsatisfactory studies.

(H) Cholecystography should be the initial examination for an elective G.I. work up.

(I) Incidence of 100 per cent of pathology present in nonvisualized cases when other factors excluded.

(J) It is recommended that a cleansing enema or irritative suppository be used h.s. the night prior to the examination to rid the colon of excess gas and fecal matter thereby facilitating the examination.

Note: Acknowledgement is hereby given to Drs. Charles Nice, Jr. and Ramon Mouton for their generous assistance in preparing this article.

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Report on the Epidemic of Yellow Fever, Which Raged at New Orleans in 1878

Dr. E. Berjot

1. The disinfection of a city located like New Orleans seems to me impossible and useless, by reason of its situation between salt and fresh waters; the bayous of stagnant water which are so abundant from Lake Pontchartrain to the river and from the neighboring parishes above down to the sea.

2. What is the cause of yellow fever? Is it a noxious miasm; a ferment; a kind of vegetable organism; elevated temperature; bayous; peculiar topography; stagnation of subsidence of streams and rivers? Such and many more are the questions which deserve the consideration of physicians, of chemists and of naturalists, and to which I look for no answers but hypothesis.

3. Of what advantage is quarantine in a country where yellow fever is endemic? I apply it only to vessels coming from infected ports. As to quarantine between cities and towns in the same region, I regard it as very damaging to commercial interests and totally useless for preventing its spread.

New Orleans M. & S. J. 8:145 (August) 1880

Principles of Treatment Of Congenital Anomalies of the Gastrointestinal Tract*

• The author describes the diagnosis, the preoperative and postoperative care, as well as the surgical technique in the treatment of these congenital anomalies in the newborn.

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CONGENITAL intestinal obstruction, although relatively uncommon, is associated with a high mortality. During the last five years on the L. S. U. Pediatric Surgery service of the Charity Hospital of New Orleans, congenital anomalies of the gastrointestinal tract accounted for only 6 per cent of the total patients but 53 per cent of the total deaths.[1] All except 2 of the deaths in these patients occurred in infants less than one month of age, and the most common cause of death was atelectasis and pneumonitis.

The most frequent causes of congenital intestinal obstruction requiring operation in the newborn period are esophageal and intestinal atresia and stenosis, annular pancreas, imperforate anus, malrotation, meconium ileus and peritonitis, and Hirschsprung's disease.

Symptoms

The earliest symptom that should arouse suspicion of the possibility of congenital obstruction is polyhydramnios.[2] It is theorized that the fetus ingests amniotic fluid, absorbs the water, and returns it to the maternal circulation; if the fetus has intestinal obstruction and ingests little fluid, polyhydramnios may result. Therefore when the volume of amniotic fluid is excessive, the infant should be watched very carefully for signs and symptoms of intestinal obstruction.

Difficulty in resuscitation at birth occurs frequently in patients with atresia of the esophagus because they are unable to swallow the amniotic fluid in the pharynx and aspiration of a larger than normal quantity of fluid may interfere with establishment of normal respiration. Later, in the nursery, intermittent cyanosis, excessive mucus, and difficulty in feeding will be noted.

The infant born with a distended abdomen should be suspected of having meconium ileus or meconium peritonitis. In meconium ileus, which is associated with mucoviscidosis, the abnormally thick and tenacious meconium causes a mechanical obstruction in the ileum; just above the obstruction a segment of ileum becomes massively distended with soft meconium and may twist into a volvulus. Meconium peritonitis results from prenatal perforation of the gastrointestinal tract, the highly irritating meconium causes the exudation of large amounts of peritoneal fluid, and if the perforation is still open at birth, air will escape into the peritoneal cavity.

The classical triad of vomiting, distention, and obstipation are not always seen in congenital obstruction. Abdominal distention may be absent in a high obstruction because the obstructed segment can be emptied by vomiting, and grossly normal meconium stools may be passed because some meconium is formed in the

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, in Baton Rouge, May 3, 1960.

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bowel distal to the obstruction.

Vomiting, however, will occur and may be the only early abnormality noted. Since most of the obstructive lesions are below the ampulla of Vater, the vomitus usually contains bile. Regurgitation of bile may be seen in nonsurgical conditions (e.g., sepsis and intracranial damage) but should be considered as due to obstruction until proven otherwise. Bile-stained vomitus should always be regarded as a danger signal; it never occurs with the casual spitting-up and vomiting that is so frequent in normal infants.

Diagnosis

Esophageal obstruction can be diagnosed by nasogastric intubation and x-rays with a small amount of nonirritating contrast material. The films should always include the abdomen, because absence of air below the diaphragm will indicate agenesis of the distal esophagus.

What sort of investigation is indicated in a distended or vomiting newborn infant? In most cases, a single erect or flat x-ray of the abdomen will provide sufficient information to make a diagnosis. Scattered intraperitoneal calcification is pathognomonic of meconium peritonitis. Pneumoperitoneum indicates perforation of the gastrointestinal tract, either spontaneous or secondary to peptic ulcer or deficiency of the gastric muscularis. Massive dilatation of one or more loops of bowel occurs only in congenital intestinal obstruction; the intestine may become moderately enlarged in acquired obstruction, but enormous distention, which develops slowly over a period of months, can occur only in congenital obstruction.

Rarely, it may be difficult to determine whether a very large bubble of air is contained within the lumen of the bowel or free within the peritoneal cavity. Under these circumstances, further investigation is not warranted, because both congenital obstruction and pneumoperitoneum are indication for emergency operation. Incidentally, it should be noted that pneumoperitoneum may result from perforation of any portion of the gastrointestinal tract in a small infant.

In duodenal obstruction, the classical "double bubble" (stomach and hugely dilated duodenum filled with air) is accompanied by absence of air in the remainder of the abdomen. In obstruction distal to the ligament of Treitz, there may be many loops of gas-filled intestine, but there will be one segment, just above the obstruction, which is considerably larger than normal.

If the patient has recently vomited or the gastrointestinal tract contains insufficient air to outline the loops of bowel, the stomach should be completely emptied and air injected through a nasogastric tube. Ordinary room air is a safe and satisfactory contrast material. If an abnormally distended loop of bowel is demonstrated, further studies with lipiodol or barium are specifically contraindicated; gastrointestinal series is not done for intestinal obstruction in adults and it should not be used in obstruction in infants. Reverse peristalsis prevents the contrast material from reaching the obstructed segment, and vomiting may result in aspiration into the tracheobronchial tree.

Infants normally have a large amount of intestinal air; however, uniform dilatation of all visible loops of bowel usually indicates paralytic ileus due to sepsis. Identification of cornified epithelial cells and lanugo hair in the meconium will exclude the possibility of complete obstruction.

Gastrointestinal series with any contrast material except air is contraindicated in complete obstruction but is often necessary in partial obstruction. The patient with incomplete obstruction may not vomit as early, as often, or as much as the one with complete obstruction, and some milk curds will appear in the stools. If vomiting is persistent and the infant fails to thrive, however, gastrointestinal series is indicated. After aspiration of the stomach, 15 to 20 cc. of a thin barium suspension is instilled through a nasogastric tube and the configuration of the

pylorus, duodenum, and jejunum are evaluated. As soon as these structures are visualized, the residual barium in the stomach is aspirated. Vomiting and aspiration are prevented by using a small amount of thin barium instilled into the stomach and promptly removed.

Annular pancreas produces a long circumferential constriction of the descending portion of the duodenum, but it may be impossible to differentiate it from other forms of obstruction in the duodeum. Abnormalities of the duodenal curvature will be diagnosed as malrotation. Follow-up films showing the transit of contrast material through the intestine may demonstrate delay in passage of abnormal dilatation of a loop of bowel.

It may not be possible to differentiate large from small intestine with plain films in an infant. The colon of a newborn infant is without haustrations and may be tentatively identified only by position. If the x-rays suggest colon obstruction and examination of the perineum excludes the possibility of imperforate anus, barium enema is indicated in infants as well as in adults. A tiny unused "micro-colon" is evidence of a congenital small bowel obstruction, and abnormal position of the right colon indicates malrotation. If pale rubbery casts of the colon and then normal meconium are expelled with the enema, meconium constipation will have been diagnosed and successfully treated. Dilatation of the proximal large intestine and a normal sized distal colon is diagnostic of Hirschsprung's disease, even if large amounts of gas and feces are expelled with the enema. Congenital megacolon cannot always be diagnosed by barium enema in the first few weeks of postnatal life, however, because the upper normal bowel is not always sufficiently dilated to contrast with the normal sized distal aganglionic segment.[3]

Preoperative Preparation

If a nasogastric tube was not used before or during the x-ray examination, one is inserted as soon as the diagnosis of obstruction is made. Gentle suction and frequent irrigation are necessary to insure efficient functioning of the tube. The infant is placed on his abdomen in an incubator with maximum humidity and given broad spectrum antibiotics. Protection against infection is required in all newborn surgical patients because of the lack of resistance to infection and because an incision is soon to be made near a contaminated umbilical cord stump or unhealed umbilicus. Necrotizing wound infection and evisceration are common in these patients.

Frequent suctioning of the nasopharynx is probably the one most important feature of the preoperative care. Newborn infants have very poor cough and gag reflexes and easily aspirate respiratory tract secretions and vomitus. Suctioning, at least hourly, with a No. 8 or 10 rubber catheter attached to a machine regulated to 7 or 8 inches of mercury vacuum will remove secretions and stimulate coughing without causing mucosal bleeding.

Unless the diagnosis of congenital obstruction is made within twenty-four hours after birth, fluid and electrolyte deficits must be corrected before operation. One exception is the patient with atresia of the esophagus; this patient has had no abnormal loss of fluid and will probably not need preoperative fluids if the diagnosis is made before the age of 48 hours.

The infant with congenital obstruction will have been in perfect fluid and electrolyte balance at birth, due to the placental and maternal circulation, and most of the fluid vomited during the first few hours after birth will have been lost from the circulation and replaced before birth. After twelve to twenty-four hours of vomiting, however, dehydration will develop rapidly, due to the lack of intake, the continued loss, and the inability of the immature kidney to conserve water.

In calculating fluids for newborn infants, it is important to remember that moderate dehydration is not harmful but that overhydration is often fatal. A safe

and satisfactory method of correcting dehydration in patients with congenital intestinal obstruction is the diarrhea routine used by the L. S. U. Department of Pediatrics. Salt and water are given rapidly at first, then more slowly, until renal function indicates that potassium replacement is safe. In most cases, these fluids may be given in this order without benefit of blood chemistries:

1. Initial fluid consists of half-strength saline in 2½ per cent glucose, 10 to 20 cc. per pound, in one to two hours depending on the severity of the dehydration.

1a. If dehydration is extreme and shock is present, 5 to 10 cc. per pound of whole blood may be given next. This is not usually indicated in newborn infants because of the normally high hemoglobin.

2. The next step continues the half-strength saline in 2½ per cent glucose, 30 to 60 cc. per pound, over a six or eight hour period. As soon as the patient voids at least once, but preferably twice, this fluid is discontinued and

3. 30 to 60 cc. per pound of NaK glucose* is administered over a six or eight hour period.

At some time during the third step the patient will probably be able to tolerate operation.

An adequate dose of a drying agent is administered at least thirty minutes before induction of anaesthesia; this is a necessity in all pediatric anaesthesia, but the smaller the patient, the more important it becomes.

Operation

Endotracheal anaesthesia is mandatory in operation for esophageal atresia and is the technique of choice in all patients with intestinal obstruction. In infants, intubation is usually accomplished before induction of anaesthesia, to avoid the hazard of laryngospasm. Local anaesthesia is usually unsatisfactory and can be used for abdominal operation only if the patient is too weak to cry and struggle. Whole blood is always given during operation—10 cc. per pound if blood loss is minimal and more if necessary.

Operative technique in surgery of the newborn must be very gentle; rough handling of tissue produces excessive postoperative edema and, later, excessive scarring. Very small suture material is used (5-0 catgut and silk on atraumatic needles) and no more than two millimeters of the cut edge of the bowel is turned in toward the lumen.

Esophageal lesions are repaired through a right transpleural approach. Extreme care must be used to avoid stricture of the trachea and tension on the suture line.

In all forms of congenital intestinal obstruction, operative decompression of the proximal bowel will aid in closing the abdomen, improve respiration by reducing pressure on the diaphragm, and hasten postoperative return of peristalsis. The entire gastrointestinal tract must be thoroughly examined to avoid overlooking multiple areas of obstruction.

Obstructive lesions of the duodenum are not resected, because of the inaccessibility of this segment and the proximity of the common and pancreatic ducts and the superior mesenteric vessels. Treatment of choice is side-to-side duodenojejunostomy,[4] but a very high duodenal obstruction may require gastrojejunostomy.

Lesions below the ligament of Treitz should be resected[5] and bowel continuity re-established with a modified end-to-end anastomosis, using a long antimesenteric slit in the distal bowel. The dilated, hypertrophied, and edematous proximal segment should be resected back to relatively normal bowel; return of effective peristalsis is slow in the segment just above a congenital obstruction.

A Roux-en-Y anastomosis is probably the most satisfactory treatment for meconium ileus.[6] In this procedure, the maximally dilated segment of ileum is resected, leaving in place the portion of the bowel obstructed by inspissated meconium. The end of the proximal segment is anastomosed to the side of the distal bowel,

* NaCl 1.5 gms., KCl 2.0 gms., glucose 35 gms. per liter.

leaving a Roux-en-Y limb about four centimeters long. This distal limb is brought out through a separate incision and used for instillation of pancreatic enzymes postoperatively. As soon as obstruction is relieved in the distal segment, the ileostomy ceases to drain and can be closed electively.

The use of gastrostomy in the above forms of congenital intestinal obstruction will considerably simplify the postoperative care.[7] A No. 16 or 18 mushroom catheter is sutured into the stomach and brought out through a stab wound in the left upper quadrant of the abdomen, and the stomach is sutured to the anterior abdominal wall. This gastrostomy tube will provide adequate postoperative decompression and will obviate the increased secretions due to the irritation of a nasogastric tube. Aspiration will thus be reduced by eliminating vomiting and excessive nasopharyngeal secretions.

Malrotation is recognized by the abnormal position of the right colon. Even though the primary cause of obstruction is midgut volvulus, the duodenum should be completely mobilized. After dividing all abnormal adhesions and reducing volvulus, the bowel is replaced in the abdomen in the position which seems most natural; usually the right colon will be placed on the left side of the abdomen and the duodenum allowed to lie in the right gutter.

Hirschsprung's disease in a very young infant should be treated conservatively with enemas and stool softeners. If this therapy fails, or the diagnosis is made at operation, colostomy is recommended, and at laparotomy, the aganglionic segment is biopsied. Since infants lose a large amount of water in the stools, the colostomy should be in the most distal portion of normal bowel.[3] In constructing a colostomy in an infant, the peritoneum is sutured beneath the exteriorized loop or to the bowel wall to prevent evisceration of the small intestine.

The ideal treatment of an infant with imperforate anus is definitive repair[8]—closure of any existing recto-urogenital fistula, which is assumed to be present until proven otherwise, and construction of a perineal anus. If the condition of the patient will not permit an abdominoperineal pull-through, a high sigmoid colostomy should be made, leaving enough distal bowel for a pull-through procedure at a later date.

Postoperative Care

Postoperatively all newborn infants are kept in the prone position in an incubator with maximum humidity; and antibiotics, gastrointestinal decompression, and nasopharyngeal aspiration are continued.

Intravenous fluids are carefully regulated to prevent overhydration. The volume of urine is probably the best guide to the state of hydration in a postoperative newborn infant; the patient who voids five or six times a day is usually receiving an adequate amount of intravenous fluid.

Maintenance fluid consists of equal parts of 5 per cent glucose and NaK glucose, and the volume is based on the age and weight of the patient. Usually no maintenance fluid is necessary on the day of birth; thereafter the volume is increased 10 cc. per pound per day up to a maximum of 30 cc. per pound per day. Fluid lost from the gastrointestinal tract is replaced volume for volume with equal parts of normal saline and NaK glucose.

Summary

In a newborn infant, the diagnosis of "intestinal obstruction, etiology and site undetermined" is adequate indication for abdominal exploration. Extensive preoperative investigation is unnecessary and harmful. Prevention of aspiration by the use of frequent nasopharyngeal suction, operative gastrostomy, and minimal amounts of intravenous fluids will decrease the incidence of pulmonary complications, the most common cause of death in newborn surgical patients.

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The Law of Slander as Applicable to Physicians

The following paper on this interesting subject appears in the last (August) number of the **American Law Register**, of Philadelphia. It is from the pen of Mr. W. H. Whitaker, attorney at law, of our city, and it teaches a lesson from a very good text.

There is perhaps no class of prefessional men more subject to abuse, and, it is believed, more powerless to obtain redress than physicians. About clergymen, the law has thrown its protecting arm, and public opinion has been wont to overlook, if not to pardon their shortcomings. The clergyman is a sort of privileged person, whose character is tried before and whose conduct is regulated by ecclesiastical tribunals, to which the courts of law have relegated it. Lawyers can take care of themselves.

For alleged professional misconduct, incapacity or ignorance, for rumored unskillful treatment of diseases, physicians who choose may have recourse to legal proceedings. But to cowhide the editor or sue the newspaper for the circulation of a libel, may be said in either case to be a social suicide. The physician must grin and bear it. But if he braves public opinion and asserts his rights, if he endeavors to obtain satisfaction at law, the chances are, to say the least, uncertain. It is doubtful, as the law now stands, what charges of misconduct in a physician in a single instance are actionable.

New Orleans M. & S. J. 8.464 (Nov.) 1880.

Management of Chronic Maxillary Sinusitis In Children

• Too often after removal of tonsils and adenoids, the symptoms still persist. The author reviews the findings in 94 children and draws certain conclusions.

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THE diagnosis of chronic maxillary sinusitis in children may too frequently be overlooked. The attention of the physician is focused on symptoms which he may believe are due solely to infection in the tonsils and adenoids, when actually they are caused by disease in the maxillary sinus. Tonsillectomy and adenoidectomy may thus prove disappointing for the relief of the original complaining symptoms.

However, there are a group of children whose symptoms are postnasal discharge, frequency of acute upper respiratory infection, and cough with or without expectoration. For relief of these symptoms they had a tonsillo-adenoidectomy, yet the postnasal discharge, acute colds and coughs persisted.

This is simply another way of restating the original premise set forth in the first paragraph; i.e., maxillary sinusitus may be frequently overlooked.

This report is based on a study of the histories and observations of a group of 94 children who were seen from 1955 to 1959, inclusive. The conclusions, herein, are consistent with those based on a similar study by the writer in 1953.[3]

Of these 94 children on whom a diagnosis of maxillary sinusitis was established, 48 referred to as "Group A" had not had a tonsillectomy and adenoidectomy previously done elsewhere before being seen by the writer. The remainder (46 children) had had their tonsils and adenoids removed. They are referred to as "Group B."

Rhinologic Examination

Unfortunately, there is no diagnostic sign which is pathognomonic of sinusitis. However, upon examination of a typical patient, the nasal mucous membrane appeared more congested and the nasal breathing space was diminished. In such patients, gross mucopurulent exudate could often be observed in the middle meatus and/or on the floor of the nose.

Nasal smears for bacteria, pus cells and eosinophils were routinely made on all patients. In Group A (those in whom tonsillo-adenoidectomy had not been done), only 8 of the 48 showed eosinophilia; while the remainder showed bacteria and predominance of polymorphonuclear leucocytes. All of Group B showed bacteria and polymorphonuclear leukocytes; 5 of the 46 had some eosinophilia.

Transillumination did not always give accurate information. In some of the younger children the light shone through the sinus to a greater degree than was expected when correlated with the roentgen ray report. Also, it was observed that the degree of opacity of the sinus did not always indicate the character of the exudate eventually recovered.

Anatomy

The intranasal anatomy of the nasal cavity is of utmost importance. J. Parsons Schaeffer [1] stresses the fact that the ventrodorsal (length) measurement of the maxillary sinus in children up to 15 years of age is greater in proportion than the cephalo-caudal (height) and the mediolateral (width) dimensions of the sinus. He cautions against using the inferior meatus or canine fossa in children as a surgical approach, since either approach may result in injury to the permanent teeth buds.

He recommends employing the natural ostium for aspiration of exudate. Schaeffer also states that the middle meatus is largely overhung and hidden from view by the large valve-like and operculatory character of the middle turbinate. The anatomical configuration can be of such character as not only to mitigate against conservative office treatment such as anterior nasal suction or displacement procedures, but also to spend needless time and to prolong the morbidity.

The natural ostium, according to Warren B. Davis,[2] varies from a narrow slit-like opening to form an oblong or ovoid opening. It varies in size, 2.5 to 4 or 5 mm. up to 14 years of age.

Physiology

The cilia of the mucous membrane of a paranasal sinus move the mucus and any foreign material by an escalator-like and sweeping action toward the natural ostium. Since most of the secretion is constantly flowing—moving toward the opening of the sinus cavity, it remains clear and open. However, when infection exists the mucus is changed to mucopurulent or frankly purulent in character. It becomes thicker and more viscid and thus makes it difficult for the cilia to move. The mucous membrane becomes swollen, edematous and eventually thicker. Some of the exudate may exude through the natural opening and some is absorbed by the blood and lymph. If the pathologic process continues the entire cavity is eventually obliterated and the air space is replaced by exudate, if the production of the exudate is greater than the outflow.

Symptoms

Group A—48 patients

(Those with tonsils and adenoids present)

1. Acute upper respiratory infection (More than 3 a year—average 7) 40
2. Nasal obstruction, unilateral or bilateral 34
3. Cough with expectoration 28
4. Cough without expectoration 12
5. Headache 8

Group B—46 patients

(Those without tonsils and adenoids)

1. Postnasal discharge 42
2. Nasal obstruction, unilateral or bilateral 29
3. Cough with expectoration 26
4. Acute upper respiratory infection (More than 3 a year—average 5) 16
5. Cough without expectoration 10
6. Earache 3

TABLE 1
DURATION OF SYMPTOMS WHEN FIRST EXAMINED

Group A	Group B
3 months to 3 years	6 months to 5 years

29 had symptoms antedating tonsil and adenoid removal.

TABLE 2
INCIDENCE

	Group A
Age	3 to 14
Greatest number	5 to 7 years
Sex	26 males - 22 females
Race	All white
	Group B
Age	5 to 16
Greatest number	7 to 10 years
Sex	27 males - 19 females
Race	All white

Previous Treatment

Group A—48 patients

The parents of 12 patients had been previously told that sinus infection was present. Nose drops or nasal sprays were used in conjunction with courses of antibiotics. Several (14) had tamponade treatments or displacement. All the parents were unanimous in stating that there was only either a temporary cessation of some of the symptoms or they were only less severe. None, however, became free.

Group B—46 patients

In this group of patients all had had tonsillo-adenoid surgery. Twenty-nine of the parents said that the symptoms which the child had complained of, or what they as parents had observed, not only antedated the tonsil and adenoid surgery, but persisted as greatly afterwards. Twenty had some form of nasal treatment either tamponade, anterior nasal suction, or displacement. When the sinus infection had been previously diagnosed, the parents were told the sinus infection would subside after the throat surgery. It did not.

General Examination

All patients had a general physical examination to eliminate the presence of other lesions or foci of infection. Only those with maxillary sinus infection with or without tonsils are included in this survey. All had complete blood counts, sedimentation tests, and heterophile titrations. Those with recent acute upper respiratory infection (acute rhinitis, acute otitis media, acute nasopharangitis) showed some leukocytosis. An increase in the sedimentation rate 10 to 18 mm. was normally present although in some, it was actually normal 4 to 8 mm. Those with symptoms over a long period of time showed the higher readings. The frankly allergic child with asthma and/or hay fever was not included in this survey.

Rhinologic Examination

As stated above there is no one pathognomic sign for sinusitis. The otolaryngologist must be alert to not only the possibility but also the probability. If the nasal chamber seems heavily congested, if there is more than an average amount of mucopus, especially on one side, if transillumination seems the least impaired, a roentgen ray of the maxillary sinus is indicated. In other words, clinical examination is not infallible.

The roentgen ray will reveal the presence and extent of the sinus infection. I believe it to be the most important adjunct for diagnosis.

Surgical Procedure

All the patients are operated upon under general anesthesia.

A mouth gag is inserted to facilitate removal of any postnasal discharge or bleeding that occurs during operative procedures. Next, the middle turbinate is visualized and gently pushed mesially by any slender rigid (closed) alligator-type instrument. This accomplishes three things. First, it affords easier access to the small natural ostia of the sinus. Secondly, it facilitates postoperative drainage from the sinus. And, lastly, it insures better and more lasting results from postoperative treatment.

Next, a rigid, curved, natural ostium cannula is inserted through the natural ostium which is usually small. If not promptly found (which is seldom) the cannula is forced through the pars membrancea. In either instance it is then possible to reach all portions of the sinus cavity by manipulation of the external portion of the cannula.

In younger children, those three to nine years of age, the cannula is forcibly yet gently pushed and pulled so as to enlarge or dilate the opening into the sinus. In older children, a small curved cutting forcep is inserted into the opening and an enlargement carried out. Only three or four, at the most, judicious bites are all that are necessary. Gentle suction both intranasally and into the antrum and then postnasally is done.

The exudate from the sinus is collected in a glass suction trap and sent to the laboratory for culture and sensitivity tests.

The bleeding is usually minimal. If brisk, it usually lasts for only a few minutes and only rarely is an intranasal packing required.

Postoperative Observations

Subjective: It is not unusual for the child to volunteer that he can breathe more easily through the nose three or four days after surgery. This is true even if adenoid tissue is existent. Those who had a cough either with or without expectoration rapidly improve from this symptom.

Objective: During the postoperative days in the hospital by anterior rhinoscopy mucopus can be seen exuding in the middle meatus. After a few days the mucous membranes lose their congestion and swelling and the nasal space increases in size.

Postoperative Care

An antibiotic is given every four to six hours for the first day and then every eight hours; when the report of the culture and sensitivity test are returned at the end of forty-eight hours, the indicated antibiotic is prescribed and frequently

augmented by the second indicated one.

On the first postoperative day and for three successive days, anterior nasal suction is done to remove the old coagulated, bloody mucus and mucopus.

Hot moist packs are also applied over the cheeks for thirty minutes at least three times daily during the hospitalization and the patient is instructed to draw backwards into the throat the exudate and expectorate it. The patient is usually discharged on the fourth or fifth postoperative day.

The child is seen in the office for further nasal suction about every fourth or fifth day from two to four weeks. At the end of four or five weeks from the date of surgery, another roentgen ray of the sinuses is taken. In about every instance a marked improvement, if not complete clearing of the sinus, is observed. In 7 of the Group A and 4 of Group B, residual mucous membrane thickening persisted but the children were asymptomatic and gaining in weight.

All parents were advised to keep the child out of swimming for the ensuing summer.

Summary and Conclusions

A series of 96 children who had severe maxillary sinusitis infection were studied. The report of sinusitis was established by roentgen ray examination.

Previous conservative therapy gave little or no relief.

Tonsillo-adenoidectomy did not effect a relief of symptoms.

An enlarged natural ostium was made after the middle turbinate was mesially displaced.

Postoperative treatment consisted of antibiotic therapy and nasal-sinal suction during hospitalization; this was continued for approximately one month.

A high percentage of cures can be obtained by this method of management.

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Health of New Orleans

The month of August has been remarkably healthy, comparing favorably with the corresponding month of the past ten years. The records of the Board of Health are not yet quite complete, but there is good reason for believing that the number of deaths has been less than has occurred in August since 1866.

Malarial fevers have increased, but the type of the disease is not malignant, and but few deaths occur from this cause. Cases of diphtheria and scarlet fever are occasionally reported. Measures are instituted to prevent their increase, and apparent success has attended the sanitary methods employed. Not a case of yellow fever has been reported.

New Orleans M. & S. J. 8:290 (September) 1880

Current Concepts in Nasal Reconstruction*

• The shortcomings of nasal surgery have been recognized and new techniques designed to restore nasal function.

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IT WAS almost twenty-five centuries ago that Confucius said, "I have not discovered nor do I offer that which is new; I seek but to restore the ancient morality." His words apply well to the subject for discussion in this paper. The problems of nose surgery are ancient and well recognized. During the days of Confucius nose operations were performed most frequently to restore the organ punitively severed from criminals or captive warriors. They were unreliable and usually done in illegal secrecy by quacks. Today there is no legal interdiction against nasal surgery but its value is still questioned by doctors and laymen alike.

This attitude has been somewhat justified, for the indefinite indications, uncertain technics, and unpredictable results of this surgery in the past have left much to be desired. There was a lull in progress but rhinologists have revived efforts to improve the situation and it is felt that rhinologic surgery can now be performed to produce beneficial results with acceptable regularity. Unfortunately, rhinology is a graduate study and many medical practitioners in other fields are unaware of the rapid strides which this specialty has made. The old anathema toward operating upon a nose is widely maintained and maledictions against the procedure are often spoken hastily without regard for recent improvements in nasal reconstruction. The rhinologist can correct this error by informing his colleagues of the current principles and concepts which have established nose surgery as a reliable medical science.

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 6, 1959.

Awakened Interest in Preservation of Nasal Function

The first manifestation of renewed efforts to improve rhinology was an awakening of interest in nasal function. The physiological studies of Mink and his contemporaries were overlooked during the early twentieth century which marked an era devoted primarily to technical proficiency. Cocaine and novocaine had recently been introduced for local anesthesia and, with the pain of operation briefly under control, Freer and Killian led the field in a quest for surgical methods to speedily remove all obstructive submucous portions of the nasal septum. This atmosphere of haste obscured the need for restoring normal anatomy and the nose was left without support. Certain shortcomings of these septal operations were immediately apparent but this important advancement in nasal surgery served as sufficiency for quite a long time.

It is now appreciated that undesirable sequelae from nose operations may require years for full development. By the late twenties enough unhappy results from extensive nasal surgery had been observed to demand further assessment of the situation. Reconsideration of nasal physiology indicated the need for proper anatomical configuration rather than extensive space in the nasal fossae. The old morality was restored as Confucius said and rhinology again becoming mindful of the pioneer studies of nasal function reappraised and added greatly to them and applied the knowledge in surgical practice.

The human nose was now appreciated as an organ of high phylogenetic order specific to man and adapting him to an efficient active existence in the upright

position; not a simple channel for passage of air but an essential organ of respiration which prepares air quantitatively and qualitatively to be transferred to and from our pulmonary system. Logical nose surgery had to be developed to restore such an important and elaborate organ for a midseptal evulsion of cartilage and bone was solely inadequate and often improper. Physiological reconstruction of the total nose was what the operation demanded.

An important influence in technically improving nasal surgery was the introduction of rhinoplastic principles to the rhinologist. Samuel Foman, trained by Jacques Joseph, the father of rhinoplasty, recognized the vital importance of incorporating external pyramid surgery with operations on the nasal septum to create a surgical science of total repair. He unselfishly devoted the climax of his career to teaching plastic surgery and rhinoplastic technics to interested rhinologists hoping that they might contribute their knowledge of intranasal surgery and physiology. Maurice Cottle and his group represent a most complete example of this concept and through such efforts the science of rhinology has properly attained a status similar to otology and laryngology in the ear, nose, and throat, triad today.

Improvement in Operative Conditions

One very fundamental development from melding rhinoplasty into rhinology was establishment of methodical and sterile surgical technique in nose operations. Submucous resection of the nasal septum had degenerated into a one-man procedure often performed with bare hands in clinic cubby-holes off a dusty hall. The patient sat upright with a minimum of surgical preparation. The instruments were poorly prepared and there was general laxity in aseptic precautions. The paucity of hope for beneficial results from septal surgery was clearly reflected by the fashion in which it was conducted.

In total contradistinction the nose operation is now done in a completely equipped surgery, with patient supine, comfortable, sedated, and thoroughly prepared in accordance with aseptic principles. Nasal vibrissae are clipped short for better visibility and the field of operation carefully prepared and draped. Precise controlled anesthesia has eliminated haste from the list of surgical objectives. Adequate surgical assistants are provided, the instrumentarium and illumination are generous, and strict attention to detail is maintained. The operation is performed in an atmosphere of dignity and importance which conveys a feeling that beneficial results are reasonably assured.

Preoperative examination and analysis today include mask making, photography, complete x-ray and laboratory study, and tests of nasal functional efficiency. Surgery is planned according to the difficulties and abnormalities presented by each individual nose. The septum, the bony vault, the cartilaginous vault, the lobule tip and the lobule base are treated as separate units, all integrated into the total procedure.

Postoperative care is attentive and methodical. The nose is properly dressed inside and out to be held gently but firmly in its new position. Dressings are inspected twice daily, adjusted and removed with diligent surgical cleanliness.

Medication is exact and closely supervised with minimal reliance on a list of routine orders. Intranasal dressings remain in position until the tissue reaction subsides and allows the dressing to part from the mucosa without damage. It is then gently removed and withdrawal is discontinued if excessive bleeding or pain occurs. Patients are soon ambulatory but an injudicious quick return to full activity is discouraged. The operation is planned when a period of adequate free time can be devoted to convalescence. Nasal surgery is never presented to the patient as a three-day process easily accomplished during a long week-end.

The generally utilized procedure during the years before World War II was the Killian type septal resection. It was a broad attempt to provide space within the nasal fossae for passage of air and drainage of the paranasal sinuses. Nothing more was considered and the need for restora-

tion of proper nasal function was overlooked. Turbinates were ofen concomitantly destroyed and sinuses extensively exposed and curetted. One must not be unduly critical of this radical sacrifice of essential structures, for at that time the alternative may have been loss of a life. Before the introduction of systemic antimicrobial drugs infection was extremely difficult to control and complications of sinusitis had fatal potential which reduced breathing problems to a secondary role. Now that severe sinus disease is less dangerous rhinologists may devote more surgical effort toward reestablishment of a physiological nose. The septum requires preemptive consideration in this process and must be restored rather than resected.

Prevention of Postoperative Complications

The aim of nasal surgery today is reconstruction of anatomy for reestablishment of function. Included in this must be prevention of postoperative sequelae which create septal and external nasal deformities more disabling than the original problem. These sequelae are frequently responsible for nose surgery's unsatisfactory results. The possibility of their development is inherent in Killian's resection and Joseph's rhinoplasty and they are often observed in the unhappy nose following such operations. Some are unrecognized and the fact that they can be prevented is not sufficiently appreciated.

The most commonly observed postoperative problems are atrophy, septal perforation, saddling of the dorsum, and retraction of the columella. Their etiology is disturbance of nutrition, loss of rigid support for soft tissue, and contracture of excessive scar tissue formation in the healing process. These deformities may not develop for months or years following surgery and the attempt to control them has required long and diligent observation and study. Each of these problems provides a subject for lengthy dissertation but only brief consideration is possible within the scope of this paper.

Atrophy

Atrophy basically encompasses nearly all of the undesirable postoperative sequelae observed. Nasal atrophy as distinct from atrophic rhinitis does not imply crusty exudates and foul ulceration. Any thin firm aglandular mucous membrane or skin fixed by fibrosis is atrophic. It does not function properly and contributes to nasal discomfort. Atrophy results from disproportion between soft tissue covering and underlying supportive structures which necessitates stretching and creates disturbances in innervation and blood supply. Other causes are irritation from exposure to air currents and fibrous replacement of tissue excessively traumatized by surgery.

The potential for surgical atrophy lies in all portions of the nose and its prevention must be an underlying concept throughout the operation. Incisions should be sharp and precise, dissection should follow exact anatomical planes and the nutritive supply lines should be maintained intact. Perichondrium and periosteum should not be removed for they nourish the rigid support structures. Mucous membranes must be preserved to the last millimeter so that they need not be stretched to recover the area from which they were elevated. Sharp projections or prominences should be reconstructed into flowing planes to minimize exposure, interference with air currents, and tensions on soft tissues. In order to do this one must have a technical method to approach, dismantle, and repair any or all portions of the nasal septum or external pyramid. Such technics are provided in current nasal operations by combinations of the old septal surgery with modified rhinoplasty procedures.

An important measure in the prevention of atrophy is reposition of material to provide space and substance to develop a new substantia propria. Mesothelial tissues such as cartilage and bone should be implanted beneath replaced soft tissues in the septum and nasal dorsum to prevent occupation of the space by a contracting cicatrix instead of re-establishment of a free nutritive layer. This is not considered

grafting for these mesothelial implants are not expected to grow but to act as separator media and allow the mobility essential for nutrition.

Further mobility is provided by full resection of excessive bone and cartilage in a nasal hump or any other portion of the nasal vault. The modified rhinoplasty technics allow this to be done without simultaneous loss of soft tissue covering. A large dorsal projection may have developed from excessive bone and cartilage without similar growth of skin and intranasal mucosa. In reducing the projection, bone and cartilage must be removed or repositioned separately with total preservation of the soft tissues which then will be more proportionate to the rigid support. This will relieve tension on the skin and mucosa, prevent atrophy, and allow redevelopment of normal structure and resumption of a functional role.

Postoperative Perforations of Septum

Postoperative perforations of the nasal septum develop when free edges of torn mucosa from opposite sides are allowed to grow together. They destroy septal integrity and interfere with optimal nasal pressures and air currents. Their prevention is inherent in the general principles of septal restoration for a perforation is actually an area of absolute or total atrophy. Mucosal tears cannot always be avoided but they can immediately be repaired.

Nasal mucous membrane should be elevated from underlying bone and cartilage together with perichondrium and periosteum. These are the regenerative layers and they should not be removed with the rigid structures. Any amount of time and care is justified to prevent the mucosa from tearing and though it is best to avoid unnecessary separation of the mucosa, it should be sufficiently mobilized to allow free reposition. If an unavoidable tear occurs mucosa should be elevated from the surrounding area including floor and dorsum to allow approximation of the margins for suturing without tension.

In addition to full mobilization and reapproximation of mucosa, cartilage should be implanted into the septal space between the mucosal layers to prevent contact between the margins of tears on opposite sides. This is best done after the intranasal dressing is in place to stabilize the septal implants. Autogenous or preserved cartilage may be used as well as bone material. Sharp projections should be eliminated and free edges about any incisions carefully covered. Intranasal dressing should not be packed too tightly and its removal should be delayed until it easily dislodges without displacement of tissues repaired at surgery.

Saddling of Dorsum

Saddling, slumping, sagging or collapse of the nasal dorsum is actually a description of one external result of septal atrophy. This saddling occurs in the cartilaginous vault and is to be differentiated from the classical luetic saddle from necrosis in the bony dorsum. Postoperative saddling develops from removal of the septal support and from the pull of a contracting intraseptal cicatrix which occurs when the damages of septal resection are left unrepaired. It is accompanied by outward bulging or ballooning of the lateral cartilages with broadening and flattening of the nose. Good appearance is lost and nasal function greatly disturbed.

Prevention of saddling is based on proper recognition of its source. If possible one must avoid resection of the anterior or so-called dorsal border of the septal cartilage. In addition, the cicatricial pull from healing scar tissue in the resected area of septum may be prevented by insertion of cartilage pieces into the space. This disrupts the direct pull of contracture between a firm fixation point on bone at the anterior nasal crest and spine and the weakened dorsum. Also the cartilage pieces preserve space and provide material for a loose connective tissue to develop instead of dense cicatricial formation. Thirdly, some of the cartilage may persist and give intermittent semirigid support. A single large piece of cartilage does not serve this purpose well for it fails to disrupt the line of force of the contracture and is difficult to position and maintain.

If it is necessary to remove dorsal septal cartilage immediate dorsal repair by replacement with fresh or preserved material should be accomplished. Access has already been provided and repair of the defect is much easier when done before masses of heavy scar tissue develop in the area. Material for such repair must be available during nasal surgery to meet any contingency encountered. Cartilage and bone banks are therefore an essential part of the armamentarium of today's rhinologist and his surgical repertoire should include removal of cancellous iliac bone and rib cartilage for implants.

An important means of improving support of the lower dorsum is the process of narrowing the nose. This reduces the span which must be supported by the lateral cartilages and improves their mechanical position of action. Narrowing requires mobilization of the bony dorsum to be successfully maintained without tension and also necessitates lobule alteration. Therefore rhinoplasty technics enter into prevention of saddling and are used by the rhinologist for a great deal more than cosmetic surgery.

Columella Retraction

Columella retraction originates from destruction of the caudal end of the septum without subsequent repair. As in saddling, scar tissue forms in the caudal septal space and contracts, drawing the columella inward or upward and rotating the nasal tip down. Air is directed improperly and a deformed uncomfortable nose results. The caudal portion of the septal cartilage projects far beyond the nasal crest and spine and supports the columella below as it does the dorsum above. It is highly vulnerable to injury and an essential structure for nasal function which must be successfully restored when deformed. The inability to deal with this portion of the septum by Killian's operation was one of its major deficiencies and conversely the need to preserve this area was recognized in determining the site of his incision.

Much effort has been expended in the attempt to resect defective caudal septa and restore their normal structure and function. Two notable operations for this purpose were the Metzenbaum and Galloway. The former was too incomplete and the old scar tissue soon pulled the structures back into their aberrant position. The latter involved full resection and replacement by a single plate of cartilage which was set into the columella and held by suturing. This destroyed the membranous septum and created a fixed rigid nasal tip which was uncomfortable and unable to function.

This area can only be restored by careful minute dissection and removal of deformed or abnormal structures followed by accurate reconstruction and realignment. The nasal spine must be exposed and repaired, the caudal septum rebuilt, and the lobule reshaped, by surgical technics which follow a similar pattern but must be varied to match the individual problems. Bone and cartilage implants are used freely and serial operations may be necessary. Though this is septal surgery of great importance it is almost pure rhinoplasty from the technical view point and requires the greatest proficiency in a rhinologic surgeon. Failure to properly restore and maintain a good columella area can destroy the effectiveness of an entire nasal operation.

Repair of Fractures

Recent nasal fractures are loked upon by a rhinologist as the incompleted first stage of a nasal reconstruction. Most, if not all, of the deformed noses which are operated upon are the result of trauma of variable vintage. Independent studies in different sections of the country have shown that approximately 6 per cent of all newborns suffer permanent nasal injury at birth and few of us escape repeated nasal trauma throughout our lifetime. These old fractures are amplified by growth and ultimately cause sufficient cumulative difficulty to demand attention. Therefore, in a sense nasal reconstruction is usually fracture repair and fracture repair is usually nasal reconstruction. If the surgeon is fortunate enough to see the fracture early without scarring and regrowth in improper position he has an opportunity to reconstruct the nose with-

out having to dismantle it first.

Exclusive of minor trauma with simple chip depression of the tip of a nasal bone, nasal injuries require most complete exposure, mobilization and realignment of all parts. X-ray studies are helpful but not infallible in disclosing damage to a nose which may be detected by clinical examination and confirmed at surgery. Fractured cartilages and hematomas do not reveal themselves on x-ray film and bony injury is often found to be greater than x-rays suggest. This implies a more liberal attitude toward open reduction and indicates inadequacy in blindly attempting to elevate depressed nasal bones without disengaging impacted fragments.

Nasal fracture repair is a pseudo-emergency and should be delayed until it can be done properly and completely. When associated with other bodily injury, repair of nasal damage may be postponed until the patient's general condition improves. External facial lacerations should be sutured immediately to minimize scarring but extemporaneous nasal fracture reduction has no indication. Supportive measures and prophylaxis against infection will suffice until facilities can be provided to carefully reconstruct the nose.

The nasal septum is the keystone to full fracture repair. The septum and dorsum are so totally integrated that it is difficult to mobilize a fractured dorsum and replace the fragments properly without first releasing the forcefully crushed septum. Hematomas must be evacuated to allow visibility and remove their obstruction to realignment of rigid structures. Furthermore if hematomas are allowed to remain they are conducive to heavy scar formation which contracts and pulls the nasal structures out of position after fracture realignment.

Fracture repair in children is particularly important and the needless practice of waiting for adulthood or puberty for nasal surgery has long been discarded. The center of development for the entire mid-face lies at the site where the pre-maxilla, maxilla, and vomer unite in the anterior extremity of the base of the nasal septum. The force of external nasal trauma is conducted to this point by the septum and it is often injured and displaced. Immediate repair prevents disturbed development of the upper jaw, anterior teeth, and nasal tip. Nasal pyramid and septal deformities in children should be promptly corrected by reconstruction within the extent allowed by safe periods of anesthesia, and serial surgery is justified if necessary to complete the nasal repair. Contrary to common belief, experience has shown that following repair a child's nose grows more properly rather than reassuming its previous malalignment in exaggerated form.

Summary and Conclusions

The broad aim of this paper has been to demonstrate that modern rhinology has not failed to recognize the shortcomings of nasal surgery and do something about the problem. The technics of septal surgery and rhinoplasty have been combined and redesigned into operative procedures of complete nasal reconstruction done in a meticulous aseptic fashion with physiological principles for guidance. Each total surgical procedure differs from the others in accordance with the individual nasal deformity presented for correction.

The nasal septum is the keystone in nasal reconstruction and surgery on the external pyramid must be integrated with septal surgery to be successful. Nasal reconstruction should be performed completely at any time it is indicated. These principles include recent fractures and childhood nasal repair and adhering to their dictates in such instances has produced optimal benefits.

Nasal surgery is a form of controlled nasal injury and the need for prevention of undesirable sequelae must be appreciated. It is not always possible to fully accomplish this and serial surgery may be required to attain complete restoration of a nose. Secondary nose operations are not always evidence of failure in the initial surgery. They are often anticipated when circumstances indicate that one operation cannot reliably provide all that is needed.

Cosmetic objectives are not primary in nasal reconstruction but a nose repaired

to function properly is always improved in appearance. This relationship cannot be conversely maintained if essential structures are deranged to attain external nasal proportions conforming to fancied perfection. There are valid indications for cosmetic rhinoplasty but they are subordinate to the demands of physiological reconstruction.

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Discussion

Dr. H. Ashton Thomas (New Orleans): I feel privileged to discuss such a masterful presentation as Dr. Gerald Joseph has given because I could not convince myself that so much could be so condensed and still be appreciated by men doing general practice of medicine.

The time is at hand or just about passed when an Ear, Nose and Throat Doctor suggests nose operation that the patient does not feel that a great catastrophe is at hand. In fact the techniques, the physiological thinking, the improved asepsis as well as antibiotics, have done much to eliminate the sequelae and complications which Dr. Joseph mentioned. Truth of the matter is the patient is now the aggressor and comes in wanting to know what can be done surgically to help his nose problem. It is also true, too that our confreres in other lines of medical endeavor are less prone to condemn nose operations.

Water as a Prophylactic and a Remedy

The subject of water drinking seems worthy of more than a passing notice. Many people have a notion that it is injurious to drink at meals. Of course, one may swill down such an immense quantity of water that it shall be injurious, but a moderate quantity of fluid taken at meals is rather beneficial; the abstinence advocated by many is injurious.

* * * *

I find that a very large proportion of those who suffer from nervous exhaustion, neurasthenia as it is called, do not drink enough. Is it an American peculiarity to ingest so little fluid? I believe it is. Will this then partly explain the prevalence of neurasthenia in America? S. J. Webber, M. D. in **Archives of Medicine.**

New Orleans M & S. J. 8:461 (November) 1880

Dermabrasion: Principles of Planing*

• The established role of dermabrasion in dermatologic therapy is emphasized; technique and approach are discussed.

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THE role of scraping of the skin with a high speed rotary instrument is an important one in dermatologic care. This procedure is not to be considered a panacea in the treatment of all skin deformities and/or cosmetic disfigurements. Nevertheless, the use of this dermatologic tool has its place in the various regimens of therapy that may be employed by a dermatologist in the handling of certain skin problems. While the procedure will not be applied as frequently as the more common means of treatment (e.g., ultraviolet light exposure, x-radiation, cold steel surgery, etc.) yet there are certain cases that will derive benefit from dermabrasion to achieve a physiologically and cosmetically superior end-result from therapy.

During the past three years the author has dermabraded or participated in the dermabrasion of some 250 cases. All of these cases have been very closely followed on a hospital and/or outpatient basis. The results have been greatly encouraging for the most part. In only a very few instances have the patients seemed to be displeased. When properly handled in making arrangements before performing the procedure, a most grateful patient will usually be the outcome.

Perfection is the much sought-after goal of most of our endeavors. Quite naturally, when one's work can be so openly viewed as a facial abrasion, the ultimate of good results is most desirable. Unfortunately, the transformation that may be achieved from abrasion has its very definite limitations. Under no circumstances is it recommended that a guarantee of any nature be made. While we can control the performance of the procedure, by and large, the healing depends upon the inherent abilities and attitude of the patient.

Equipment

Technical skill in performing the procedure is not difficult to attain. Basically, a calm, steady and firm hand is required to gently stroke the high speed abrader over the desired surface. The equipment per se is fundamentally uniform regardless of type with the exception of the abrading instrument. This latter may be composed of stainless steel bristles (wirebrush), serrated wheels or diamond fraises. It is left to the operator's discretion as to the particular type of instrument to be employed. Generally, when attacking fragile tissue (e.g., eyelids, bridge of nose, certain individuals—esp. those with senile skin changes, etc.) it is more prudent to resort to the use of the diamond fraise which may be coarse or fine as the case demands. If the tissue to be treated requires a heavier and more destructive approach, then one may use a steel wire brush. This instrument should be used with extreme care as it is highly destructive when handled indiscriminately, but has very artistic facets otherwise.

The diamond fraise is a very easy tool to use: (1) There is little, if any, limitation to its range of motion in that it may be moved to either side, forward and backward, clockwise and counterclockwise with little difficulty. The wire brush, however, is not so versatile. Its range of motion is limited to a downward stroke with some clockwise rotation. (Figure 1). There is considerable torque to the brush as well as the danger of multiple small lacerations from protruding

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 5, 1959.

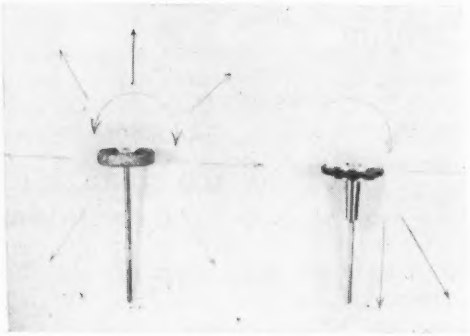

Figure 1

bristles. If the bristles should be mounted off center, the torque is increased, thereby causing the operator to exert a firmer grip and exercise greater precautions. If, by chance, the hair on some gauze should contact the rotating wire bristles, they are instantaneously snatched up by the latter and may break the shank of the handle as well as startle the patient and the operator. The diamond fraise is superior in this respect in that it will merely shove these obstacles aside instead of becoming entangled in them.

Procedure and Approach

Since tissue regeneration is accomplished through the pluropotentiality [2] of the remaining epidermis and skin appendages, it is readily appreciated how healing is better accomplished when less tissue has been removed. Actually, one is justified in leaving some disfigurements when planing scars as the areas will tend to blend more rapidly on superficial planing. Deeper scars thus will frequently be covered. Healing from superficial abrasion is more rapid and generally with a better and more natural result. On several occasions paired comparisons of different depths of planing have revealed a more satisfactory result on the superficially abraded side.

One should take great pains when completing a dermabrasion procedure to meticulously blend the abraded area with the surrounding tissue. To do this I use a cone-shaped diamond fraise; no anesthesia is required. The broad fraise is carefully applied to the border of the abraded area with very gentle strokes to blend it nicely with the adjacent skin. This gives a finer finish with less chance of a border pigmentary problem.

The patient should be indoctrinated to the goals expected in dermabrasion. One should estimate a conservative amount of improvement to be acceptable (50 to 60 per cent). Generally, this will be the situation. On the other hand it is dangerous to "guild the lily" as a patient may become extremely resentful if he or she fails to develop a fine, satin skin after the procedure. I advise my prospective planing patients as to whether the procedure may reap sufficient dividends. Thereafter, the decision is left to the patient, unless I feel insufficient benefit will be obtained; then the procedure is refused. Each one is told that the immediate convalescence may take about two weeks with a period of one year necessary to complete the total overall picture in healing from dermabrasion.

Complications

The immediate complication of planing lies in error in judgment or technical error during the procedure. Again it is pointed out that deeper planing may create a problem in that the underlying fat tissue is more closely approached. This tissue is quite susceptible to infection; thus the chances for bacterial invasion and infection are greater with deeper planing. At this time I am using prophylactic antibiotics on planing cases. The antibiotic is started on the night before the procedure and continued for a total of four days (or more, if necessary). The patient should avoid contact with all persons who manifest infections regardless of type and/or site. This is a very important part of post-planing convalescence.

Ultimate scarring is perhaps the most disastrous complication of abrasion. Generally, this is a sequel to infection. Nevertheless, if one planes too deeply, resultant scars may ensue and create a major problem. Also, peeling of the crust may lead to avulsion of epidermis and scarring. Thus, the patient must be very carefully advised not to peel any tissue whatsoever

no matter how long the crusts may persist. There is no great hurry in removing these crusts once the area has dried adequately. I have seen some of the best results where the crusts were permitted to remain intact for longer periods of time (two weeks in some instances). The crust is the span on which the underlying epithelium is bridging the gaps made by planing.

We cannot predict the residual pigmentation after planing except by old injuries on the patient; and here the prediction is obviously limited. By and large, the more superficial the abrasion, the better the end result of pigmentation. Also, the more meticulously the borders are blended, the less demarcation by pigmentation is noted. Many problems in pigment are yet to be solved. The best approach at this time in these post-planing patients would seem to be a slow re-exposure to sunlight by using various sun screens and permitting the patient to more normally re-pigment. I advise all my patients that some unpredictable pigmentary problem may result from the procedure even before it is undertaken.

Conditions Treated

Perhaps the greatest role that dermabrasion has come to assume today is in the treatment of senile skin and its associated changes.[3] What better method is there to rid of this potentially malignant tissue than in one sitting with such a patient? While various dessicating and peeling agents may be employed numerous times in treating such a patient, the same purpose may be accomplished with a far superior end-result by planing. The diamond fraise is good for this procedure. A coarse fraise may be used on thickened hyperkeratoses with good result while a finer fraise is adequate to remove most of the delicate senile skin. Too firm pressure with the fraise can result in deeper planing and produce excavations into fatty subcutaneous tissue; however, the wire brush is much more apt to do this and with less pressure. Results will usually be quite good and may be expected to persist for several years or indefinitely. If it be true that the underlying corium is in the main responsible for the epidermal changes,[4] then one can easily see how the procedure will have good results for varying periods of time since the dermis is left intact for the most part.

Acne scars usually respond well to the procedure. I prefer to inactivate the disease before undertaking the procedure and thus minimize the possibility of infection. However, each case must be judged on its own merits. It is well to remember that superficial abrasion will usually give the better result.

Sebaceous nevi and other elevated tumors likewise respond fairly well to the procedure. Adenoma sebaceum, where multiple lesions are present, is an ideal indication for the procedure. Such a case has been found to respond quite well to planing.

Wrinkles in the skin are a nuisance to many people who seek their removal. Dermabrasion here offers a wonderful opportunity toward this end. The wrinkles are frozen in place and then planed away.[5]

The ever-perplexing problem of tattoos is forever confronting us as dermatologists. Because the pigments employed are deposited well into the corium, it has been a trying task to satisfactorily remove these marks. In a destructive sense the wire brush can be employed to rid of tissue in a random and carefree fashion. However, exercising a bit of care and diligence gives us an instrument which is foremost in the removal of tattoos. By abrading into the corium and avoiding descent into the underlying fat tissue, we can rid of most of the pigment without trying to remove all of it in a destructive sense. Much of that pigment left behind will slough in the healing process when the crust peels off. Other of the pigment will remain behind and in time be lost to vision beneath newly formed tissue.

It is important to leave intact as much tissue as possible to make the bridging of gaps more effective and thereby decrease scar tissue formation. All normal skin that has not been tattooed should be left intact to act as foci for tissue regenera-

tion. (Figure 2). One should try to avoid creating too wide a gap for healing in order to minimize residual scarring even to the point of doing the procedure in two or more sittings. Thus, by leaving all normal skin and not planing too deeply we can get a good result with tattoos. (Figures 3, 4). In solidly tattooed areas one might try leaving alternate strips of tattooed tissue for purposes of re-epithelization. Later these initially unplaned strips may themselves be abraded to rid of the remainder of the tattoo.

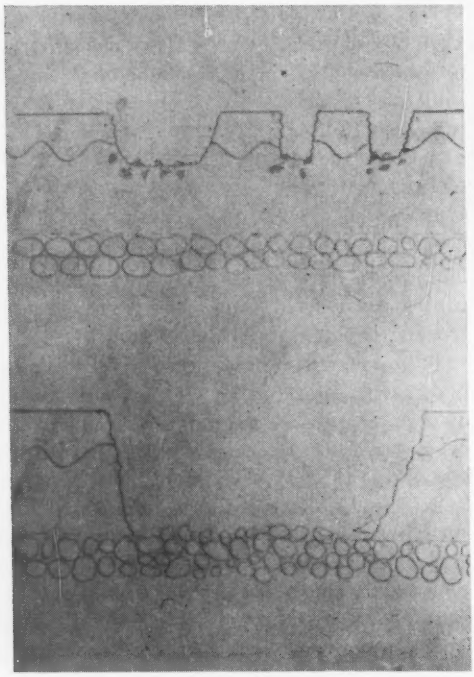

Figure 2

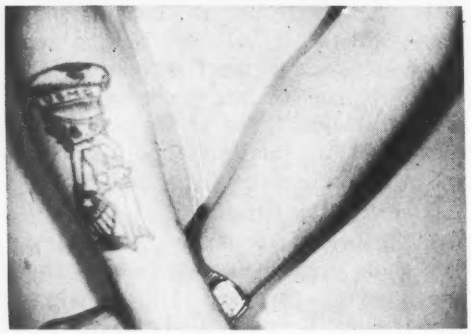

Figure 3

Figure 4

Summary

Dermabrasion has now become a well established procedure in the treatment of various skin problems.

An enlightened patient prior to the procedure will generally be a more satisfied one. A bit of explanation in advance will allay many anxieties.

Types of equipment have been discussed. The diamond fraise is felt to be the most versatile instrument for this procedure; however, a wire brush will be required in some instances.

Infection, scarring, and pigmentary problems are the main complications against which we must guard.

Emphasis on the treatment of senile skin and a new technique for removal of tattoos have been discussed.

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Discussion

Dr. Ollie Williams (Shreveport): The various aspects of dermoplaning have been thoroughly discussed by Dr. Loria with his usual excellence. Only a few points need emphasis. There is a general tendency by all dermatologists doing dermoplaning towards more superficial planing. The end result is better than with deep planing and less complications occur. The diamond fraise has found its niche in planing, but for speed alone the steel brush is more advantageous.

Dermoplaning was first used primarily on patients with acne scarring, but the indications for use of this procedure are now widespread. The treatment of far advanced severe chataigne skin, and subsequent skin cancers, is no longer such an enigma.

Superficial planing of tattoos is the best approach to try initially. In my experience this type of treatment in tattoos far excedes the results seen with other methods of removing tattoos.

The more experienced one becomes with the art of dermoplaning the more we realize its value as an adjunct or specific mode of therapy. The benefit that most patients derive from dermoplaning is extremely rewarding.

Poison of Yellow Fever

Stanford E. Chaille, M. D.

The poison of yellow fever must be, on the one hand, either an inorganic or dead organic substance, or, on the other hand, a living organism. Very few, if any, even of those who credit its spontaneous origin, deny that this poison has reproductive power. The function of reproduction is limited to living organisms, and such must be the nature of the poison of yellow fever. This conclusion is inevitable unless it can be proved, either that the poison has not the power of self-multiplication, or that other than living organisms have this power; and until at least one of these improbable hypotheses is proved to be true, science is justified in both thinking and acting upon the above conclusion. * * *

It is manifest that the failure of the microscope to prove that the causes of yellow fever, as also of typhoid fever, cholera, etc. are living organisms no more disproves this than the failure of all appliances of science to prove that the cause is an inorganic or a dead substance disproves this conclusion; and the mystery as to what is, in truth, the poison, is increased by supposing it an unknown inorganic something rather than an unknown extra-microscopic organism.

New Orleans M. & S. J. 8:303 (Oct.) 1880.

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Editorial

The Prediabetic State

The prediabetic state becomes important to the physician and to the patient in several situations. These occur when the diagnosis is doubtful. They also occur because of the possibility that the disease may develop in the relatives of diabetics.

Diabetes is a hereditary disease. This is generally known to the profession, and the public is becoming more aware of it. The relatives of diabetics seek the physician's help to learn their own condition, the possibilities of the future, and what they should do. The criteria for proving the diagnosis when the disease is fully manifest are well established, although there is some variation in their interpretation. A recent paper by Conn* gives the results of many years' work in this field and points the way by which the clinician may separate the three categories of patients—the nondiabetic, the prediabetic, the diabetic.

Using the Somogyi - Nelson method (true glucose) for the determination of sugar of venous blood, oral glucose tolerance tests were given to patients without diabetic relatives, and to patients who were relatives of diabetics. Glucose, 1.75 gram per kilogram of ideal body weight was given. Each test was preceded by a diet of at least 300 grams of carbohydrate taken over at least a three day period. He regarded as indicative of diabetes a glucose tolerance test which gives a value of 160 mg.% or higher in the first hour, 140 mg.% or higher at one and one half hours, 120 mg.% or higher at two hours. Figures substantially below those stated were regarded as indicative of normal tolerance. When the two hour value fell between 110 and 120, the patient was classified as belonging to a special group designated as probable diabetes. The tests were given to 512 subjects. Later, the same tests were given to 363 of the subjects, preceded by cortisone acetate. If the subject weighed less than 160 pounds, he was given orally 50 mg. of

*Conn, Jerome W.: The Prediabetic State in Man, Diabetes 7:347 (Sept.-Oct.) 1958.

cortisone acetate, eight and a half hours and again two hours before a standard glucose tolerance test was performed. If the body weight exceeded 160 pounds, the dose was 62.5 mg. orally, at the same times.

Following the criteria mentioned above, 387 relatives of known diabetics, but not considered to be diabetics themselves, were tested. Three hundred and two were normal, 71 were shown to have diabetes, and 14 probable diabetes. Among 125 subjects, with no known diabetic family history, 123 were normal, 1 was diabetic, and 1 was probable diabetic. Two hundred and fifty-nine subjects, who were relatives of known diabetics, were tested with the cortisone-glucose tolerance test, each of whom had previously had a perfectly normal baseline glucose tolerance test. In order for an individual to react positively to this test, his baseline glucose tolerance test must be normal and his cortisone - glucose tolerance test should show above 160 in one hour, and above 140 at two hours when cortisone was used. Among these 259 subjects, 95 were negative, and 64 were positive. Among 104 subjects, with no known diabetic family history, using the same test, 101 were negative and 3 positive.

The results of the cortisone-glucose tolerance test are particularly interesting in the 14 subjects who were regarded as doubtful in the standard test. Twelve had a positive response, that is, were diabetic, and 2 negative, that is, the two hour reading was below 140. The two types of glucose tolerance tests were also studied in 19 obese diabetics, who had positive diabetic tests before weight loss and normal after. Using the cortisone, 16 showed again the characteristic diabetic curve, and 3 were negative. It is seen that following this method, 21 per cent of the supposedly nondiabetic relatives of known diabetics have a positive diabetic curve, and that 86 per cent of those classified as doubtful have a positive diabetic curve.

This study also provides further proof that for the purposes of diagnosis a normal fasting blood sugar is unreliable in the relatives of known diabetics, and that in such a situation the standard glucose tolerance test should be used. This can be made even more informative by the addition of the cortisone-glucose tolerance test. In the interpretation, however, of any of these tests it is necessary to know the method of blood sugar determination used and to know the relationship between the normal values for the two usual methods. A normal fasting blood sugar value by the Folin-Wu method is 80 to 120 mg.%, and by Somogyi-Nelson 70 to 100.

These facts, as presented in the article by Conn, and these methods of diagnostic procedure give the clinician confidence in making decisions and in giving advice where the suspicion or possibility of diabetes exists. It is not possible to tell the prediabetic when he will lose tolerance and develop the full picture of diabetes, but it is possible to give him the accurate advice needed for his guidance and provide, so far as present knowledge goes, some degree of protection against the ill effects of hidden diabetes.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

CHIROPRACTIC BILL IS TABLED IN CALIFORNIA LEGISLATURE

The following facts show that Chiropractors once they secure a license which permits them to practice their cult in a state, are always conniving to extend the scope of Chiropractors and to broaden the field of their legal rights over and above the privileges allowed them by the original Act creating their Licensing Board.

Once you give them any legal right to practice, they will be applying for more and greater privileges and become more dangerous to our citizens and their respective communities. Our motto is "Never give them legal status in our State".

By unanimous vote the Senate Business and Professions Committee tabled a Bill (Senate Bill 1334) which, in the opinion of its opponents, would have extended the scope of chiropractic and made it easier for future legislatures to increase the scope of the practice of persons licensed under the Chiropractic Act.

Chiropractors' practice under an Initiative Act was approved by the voters November 7, 1922. Senate Bill 1334 was an amendment to that act, which in turn would have been submitted to the voters at the next general state election. A ballot battle would have been very costly and time consuming.

Sponsored by the California Chiropractic Association the new bill would have added a section to the Chiropractic Act to read:

"Sec. 6.5. Definition of Chiropractic: Scope of Practice. The term 'chiropractic' within the meaning of this Act is the science of healing, based on the restoration of the normal functioning of the human nervous system. The practice of chiropractic under the terms of this act shall be:

"(a) The diagnosing of human ailments by the use of all diagnostic procedures recognized by the various schools of the healing arts.

"(b) The elimination of the abnormal functioning of the nervous system by the adjustment of the articulations and adjacent tissues of the human body, particularly of the spinal column, but shall not authorize the use of any drug or medicine for the cure of disease, now or hereafter included in materia medica, for which a prescription is required under the laws of this State or under federal law, nor shall include the practice of surgery, osteopathy, dentistry or optometry.

"(c) The use of such procedures which make the adjustment effective including physiotherapy, psychotherapy and food supplements for special dietary use.

"(d) The use of all necessary mechanical, hygienic and sanitary measures incident to the care of the body."

MEDICARE

Our Medicare Contract with the Government expired on August 31, 1960, and as you know, our House of Delegates at the last Annual Meeting in May refused to renew this contract. All forms and correspondence regarding the Medicare Program should, now, be sent to the Continental Service Life & Health Insurance Company, P. O. Drawer 2908, Baton Rouge, Louisiana. All Sub-review Area Committees are, now, discontinued as of August 31, 1960.

We want to most sincerely thank the officers of the component parish medical societies and their participating members composing the personnel of these respective Review Committees for their cooperation and assistance in making this program a success. We have been told by the "higher ups" that the Medicare Program in Louisiana, under the supervision of the State Society, was one of the most successful and satisfactorily operated programs, and this is due to the cooperation for our members, for which we are very thankful.

STATEMENT BY DAN O. KILROY, M. D. CHAIRMAN, COMMITTEE ON PUBLIC POLICY AND LEGISLATION, CALIFORNIA MEDICAL ASSOCIATION

"There has too long been a concept among some doctors that medicine and politics do not mix. This concept has the same degree of logic as the popular conception that the ostrich can avoid all difficulties by burying his head in the sand. We must all realize that our license to practice medicine is a privilege and not a right, and that this privilege is given to us by the people of this State through their organized government. The people are represented by their Legislature and therefore the people, directly or through the Legislature, can modify the manner in which we are permitted to practice medicine. Such modifications are introduced and some passed at each session of the Legislature and these modifications affect directly and indirectly the manner in which we practice medicine. Therefore, to say that we can ignore a

body which controls our entire practice, is to ignore the simple facts of life."

We thoroughly agree with Dr. Kilroy and have been preaching that our members should take a more active part in participating in our city, parish and state politics. It is most regretful that more of our members do not qualify for elective political offices. If this was done, our task to protect the good citizens of our state against the inroads of the many cultists and charlatans, who are always attempting to invade the field of medicine, would be easy.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

PHYSICIAN POPULATION INCREASED IN 1959

The physician population U. S. and its possessions increased 4,769 in 1959. The AMA Council on Medical Education and Hospitals reported in the May 28 **Journal**. The increase of 4,769 results from the licensing of 8,269 new physicians minus approximately 3,500 who died.

Of the 8,269 new physicians, 1,626 were foreign-trained. Of 8,966 applicants for licensure by written examination, 1,162, or 12.9 per cent failed, compared with 8,633 applicants of whom 1,365, or 15.8 per cent, failed in 1958.

Nine schools in the United States had no failures among their graduates in medical licensing examinations last year. The 8,996 examines included 5,845 graduates of approved medical schools in U. S.; 178 of approved medical schools in Canada, 2,766 of 244 faculties of medicine located in countries other than the U. S. and Canada; 22 of medical schools in U. S. which are no longer in existence, and 185 graduates of schools of Osteopathy.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-fourth annual meeting of The New Orleans Graduate Medical Assembly will be held March 6, 7, 8, and 9, 1961, at the Roosevelt Hotel.

The following members have been appointed to serve on the various Standing Committees for this year:

ADVERTISING AND PUBLICITY
Eugene H. Countiss, M. D., Chairman
Dan W. Beacham, M. D., Vice-Chairman

ATTENDANCE
Paul L. Getzoff, M. D., Chairman
E. Addis Munyan, M. D., Vice-Chairman

CLINICAL TOUR
Emmett L. Irwin, M. D., Chairman
Robert A. Robinson, M. D., Vice-Chairman

CONSTITUTION AND BY-LAWS
John F. Oakley, M. D., Chairman
Daniel C. Riordan, M. D., Vice-Chairman

FINANCE
Max M. Hattaway, M. D., Chairman
Ralph M. Hartwell, M. D., Vice-Chairman

HALLS AND SCREENS
Samuel R. Staggers, M. D., Chairman
William R. Arrowsmith, M. D., Vice-Chairman

HOSPITALS
O. R. Depp, M. D., Chairman
Robert C. Lancaster, M. D., Vice-Chairman

HOTELS
J. Morgan Lyons, M. D., Chairman
Brown C. Mason, M. D., Vice-Chairman

MEDICAL MOTION PICTURES
C. Richard Walters, M. D., Chairman
Paul T. DeCamp, M. D., Vice-Chairman

PRINTING
J. Durel Landry, M. D., Chairman
Frederick F. Boyce, M. D., Vice-Chairman

RECEPTION
Charles L. Brown, M. D., Chairman
John T. Sanders, M. D., Vice-Chairman

REGISTRATION
Val H. Fuchs, M. D., Chairman
P. L. Querens, M. D., Vice-Chairman

ROUND-TABLE LUNCHEONS
William W. Frye, M. D., Chairman
H. Reichard Kahle, M. D., Vice-Chairman

TECHNICAL EXHIBITS
J. Theo Brierre, M. D., Chairman
Richard L. Buck, M. D., Vice-Chairman

TELEPHONE AND TRANSPORTATION
Robert C. Kelleher, M. D., Chairman
Charles R. Robinson, M. D., Vice-Chairman

ANNOUNCEMENT FOR GENERAL PRACTITIONERS AND INTERNISTS

Applications for Charter Membership in the American Society of Diagnostic Radiology are now being received. Membership is open to GENERAL PRACTITIONERS and INTERNISTS **who do or may desire to do some types of Diagnostic Radiology in their offices.**

For further information please write Louis Shattuck Baer, M. D., F.A.C.P., 411 Primrose Road, Burlingame, Calif.

THE VAN METER PRIZE AWARD FOR 1961

The American Goiter Association, Inc., again offers the Van Meter Prize Award of 300.00 to the essayist submitting the best manuscript of original and unpublished work concerning "Goiter—especially its basic cause." The studies so submitted may relate to any aspect of the thyroid gland in all of its functions in health and disease. The Award will be made at the Annual Meeting of the Association in the Warwick Hotel, Philadelphit, Pennsylvania, May 3-6, 1961. A place on the program will be reserved for the winning essayist if he can attend the meeting. Where more than one author appears on the manuscript they will be asked to designate a single recipient to receive the award.

The competing essays may cover either clinical or research investigations, should not exceed 3,000 words in length and must be presented in English. Duplicate typewritten copies, double spaced, should be sent to the Secretary, John C. McClintock, M. D., 702 Madison Avenue, Albany 8, New York, not later than January 1, 1961. Manuscripts that do not conform to these requirements will not receive consideration. The committee who will review the manuscripts is composed of men well qualified to judge the merits of the competing essays.

POSTGRADUATE COURE IN OPHTHALMIC SURGERY

The Department of Ophthalmology, Emory University School of Medicine, will sponsor a postgraduate course in ophthalmic surgery to be held on December 1 and 2, 1960, in the auditorium of the Grady Memorial Hospital, Atlanta, Georgia.

Dr. Frank D. Costenbader, Senior Attending and Chairman of the Department of Ophthalmology, Children's Hospital, and Senior Attending Ophthalmologist, Washington Hospital Center, Washington, D. C.; Dr. John M. McLean, Professor of Ophthalmology, Cornell University School of Medicine, New York, New York; and Dr. Harold G. Scheie, Professor of Ophthalmology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, will be the guest lecturers.

Diagnostic principles and techniques, preoperative and postoperative management, and surgical principles and techniques in extraocular muscle surgery, cataract surgery and glaucoma surgery will be discussed by this distinguished faculty.

CANCER SEMINAR

The Ninth Annual Cancer Seminar of the Arizona Division, American Cancer Society, will be held January 12, 13, and 14, 1961, Tidelands Motor Inn, Tucson.

The theme will be "Changing Concepts in Tumor Formation and Therapy." This meeting is to be devoted to the various aspects of chemotherapy, virology, endrocrinology, environmental factors, etc., as they relate to tumor formation or the therapy for tumors.

TRAINING GRANTS RECEIVED BY TULANE DOCTORS

Dr. Cyril Phillips, director of the child psychiatry program at Tulane University, New Orleans, Louisiana, and Dr. Nina R. Lief, chief resident in child psychiatry at Tulane, have received $300.00 in-service training grants from the Southern Regional Education Board under its program in mental health training and research.

They will visit the National Institute of Mental Health in Bethesda, Maryland, and universities in Maryland, Virginia, and North Carolina to observe training programs in child psychiatry.

Individual grants up to $500 are available to any employee of a mental health outpatient clinic, mental health center, state commission or division of mental health in any of the 15 states supporting the SREB's mental health program. A $76,000 grant to SREB from the National Institute of Mental Health supports the program.

Purpose of the grants is to give mental health personnel a chance to visit and observe new or different methods of operation in other states,

to help them improve their own programs.

Applications for grants are now being accepted by SREB. There is no deadline for applications, since they will be acted upon as received. Persons interested in the grants should write to Southern Regional Education Board, 130 Sixth Street, N. W., Atlanta 13, Ga.

MEPROBAMATE USERS INTOXICATED BY SMALL AMOUNT OF ALCOHOL

Persons taking meprobamate, a relaxing drug, should be warned that alcoholic drinks can have a greater effect on them.

This is the conclusion drawn by a group of researchers at Madison State Hospital, Madison Ind., from a study reported in the Aug. 20 Journal of the American Medical Association.

Meprobamate, sold under the trade names of Miltown, Equanil, Meprospan, and Meprotabs, is prescribed for tension and insomnia among other ills.

"There was more effect on human performance and judgment from a combined dosage of meprobamate and alcohol than from either of these drugs taken singly," the authors reported.

"Results indicate that physicians prescribing meprobamate should warn patients of the greater effect from drinking alcoholic beverages while taking the drug—especially if they are likely to operate motor vehicles or other complex machinery."

They said "small amounts of alcohol . . . were shown to significantly impair performance and judgment when combined with meprobamate."

Ten men and 12 women volunteers took part in the study. For a week before the experiment, the subjects took tablets containing 400 milligrams of meprobamate four times a day, a common dosage.

In the experiment, they underwent a battery of eight psychological tests on different days under four experimental conditions: (1) after taking an innocuous drink, (2) after a drink containing only meprobamate, (3) after a drink containing only alcohol, and (4) after a drink containing meprobamate and alcohol.

The alcohol administered was enough to produce about a 0.05 per cent blood alcohol level.

"This level is not sufficient to impair automobile driving ability according to a number of United States court decisions," the researchers pointed out.

The psychological tests showed, with few exceptions, the "worst performances" were turned in by the subjects under the influence of both meprobamate and alcohol.

"According to the clinical judgments of two of the experimenters, the combination of alcohol with meprobamate produced more intoxication effects than the alcohol alone in 16 of the 22 cases," the authors said.

"On the day of the combined drug dosage, four of the subjects were quite obviously drunk. They showed marked muscular incoordination and little or no concern for the social proprieties. Nothing approaching this was observed in the alcohol condition."

The experimenters admitted they "were frankly not prepared for the extent of the effects," having noted less behavioral deterioration in a similar experiment with alcohol and chlorpromazine, generally considered a stronger drug.

The meprobamate study indicates a possible potentiating effect on alcohol, they concluded.

The authors of the article are George A. Zirkle, Ph.D.; Ott B. McAtee, M. D., and Peter D. King, M. D., all of the state hospital, and Sgt. Robert Van Dyke, Indiana State Police.

CHICKENPOX CAN BE FATAL IN ADULTS

Chickenpox in adults is "a potentially fatal disease," a Texas physician warned. Writing in the July 2 Journal of the American Medical Association, Dr. Stewart A. Fish of Dallas said it has become evident that chickenpox, which is usually a mild childhood disease, may cause severe complications and death in adults.

Dr. Fish reported four fatal cases of chickenpox occurring during pregnancy. In three of the cases, the mothers were exposed to the disease by their children. In all four cases, the disease affected the lungs and other parts of the body.

However, he said, "there is apparently no specific tendency or increased susceptibility to chickenpox during pregnancy."

In 66 cases of disseminated chickenpox reported since 1942, the sex distribution is fairly equal, he said, and the association with pregnancy is probably coincidental.

The mortality among patients with disseminated chickenpox has been estimated to be between 10 and 30 per cent, he added.

Since there is no drug therapy available which will cure disseminated chickenpox or modify its course once the lungs and other parts of the body are involved, Dr. Fish urged early hospitalization of patients with disseminated chickenpox.

IDEAL DRUG FOR REDUCING HINGES ON RESEARCH

Will power is still more potent than any drug to curb overeating and probably will remain so until the appetite mechanism of man is better understood.

This is the conclusion drawn by Dr. Walter Modell, director of clinical pharmacology, Cornell University Medical College, New York, in a

report on the "Status and Prospect of Drugs for Overeating" to the Council on Drugs of the American Medical Association.

"Drugs which give assistance along the lines now available provide short-lived symptomatic relief only," according to Dr. Modell's report published in the July 9 Journal of the A.M.A.

"These seem to be useful only as adjuvants to a carefully controlled diet and, in many cases, some sort of psychotherapy.

"Total therapy must consider the psychosocial aspects of eating patterns and the desire to lose weight, as well as the specific psychological or physiological disturbance which has brought on the hyperphagia (overeating).

"In virtually every instance, motivation for losing weight as well as the psychological reasons for overeating are important considerations in determining the therapeutic regimens which are likely to be effective and to lead to sustained benefits.

"If more were known about the normal appetite mechanism, perhaps something more rational and lasting could be done about it pharmacologically. However, although we have many hypotheses, neither the central site nor the precise mechanisms of normal appetite control are yet definitely established."

Dr. Modell said studies indicate that man has a natural tendency to maintain a balance between caloric intake and energy output, adding:

"The eating patterns of most modern human adults, however, are so distorted that appetite drive and specific food selection appear to have little to do with energy and metabolic requirements."

The culture one lives in has a strong effect on eating habits, he said, and in our present society "social protocol also complicates matters."

"The business luncheon with cocktail, the before-meal highball or two or three, the with-highball canapes, all are part of the mores which consider the slim figure desirable but provides eating customs which make it hard to achieve," he said.

"Although hereditary predisposition appears to be important in some persons, this is often difficult to distinguish from culturally based obesity. Genetic, glandular, and other physical and physiological causes play a statistically small role in obesity, probably in less than 10 per cent of all cases."

Whereas obesity is a consequence of a variety of nonrelated causal factors, Dr. Modell said, there are no drugs to produce loss of appetite "to fit specific disturbances in eating patterns, and there are no useful depressants of the appetite center, wherever it may be."

A large part of Dr. Modell's report was devoted to an examination of stimulating drugs, such as the amphetamines or "pep pills," which he termed the "mainstay" of current pharmacotherapy for obesity.

In the use of this group of drugs, the patient's abnormal drive for food is distracted by a sense of well-being or "lift."

However, he said, these drugs "do not produce appetite suppression in obese persons sufficiently to make them lose weight without simultaneous dietary control."

Undesirable effects caused by stimulants have limited their use, he pointed out, and have thus far appeared to be indivisible from their power to curb the appetite.

Relatively few cases of acute poisoning and serious reactions have been reported as a result of their present large-scale and continued use, he said. However, he warned that they are "not innocuous" and may cause restlessness, excitement, depression, irritability, exhaustion, headache, dizziness, heartburn, nausea, vomiting, and diarrhea.

Habituation has been reported after the continued use of some members of this group, he said, and therefore, are not desirable for prolonged therapy.

Dr. Modell also was critical of phenylpropanolamine which can be sold without prescription and is used in such products as Regimen tablets, Di-Dol, and Rx 121.

"Although there is some evidence that if phenylpropanolamine is given in large enough dosage it will induce some anorexia (loss of appetite), a recent study . . . indicates that, in the usual doses found in these remedies (25 mg. or less), it is no more effective than a placebo," he said.

"In any event, it is likely that, if doses were used which induced anorexia, difficulties would arise due to elevation of blood pressure."

Dr. Modell made these additional points:

—Since an emotional disturbance of some sort is the basis of overeating in many persons, sedation and tranquilization may possibly assist in depression of appetite.

—Bulk has long been suggested as a means of satisfying the appetite of the obese. Unfortunately, cabbage, lettuce, and other articles of the typical grassy, high-bulk, low-calorie diet do not appeal to the average overeater who perversely prefers to distend his stomach with undiluted fat, protein, and carbohydrate.

—Many expensive obesity "cures" depend on an exhibition of weight loss to entice the patients into continuing treatments, especially in expensive salons. Cathartics, diuretics, and salt restriction are often used in such schemes, for, through dehydration, they induce some weight loss very promptly. However, in the obese patient, weight loss by water excretion is both meaningless and senseless. It does not represent a loss of fat.

—There is no reason to believe that vitamins, minerals, or sweets (e.g. Ayds, R.D.X.), containing nutritional elements, have any merit in the treatment of obesity. "Weight loss through the use of such unscientific preparations can only be excellent proof of the importance of the psychogenic elements involved and of the effectiveness of suggestive advertising."

SABIN URGES NATION TO SEEK END OF POLIO BY NEXT SUMMER

Dr. Albert B. Sabin, developer of the live polio-virus vaccine that bears his name, urged that an attempt be made to eliminate polio in the United States before next summer.

In an editorial in the July Archives of Internal Medicine, published by the American Medical Association, Dr. Sabin said:

"The laboratory and field experiences with the oral poliovirus vaccine strains that I selected are now available for decisive judgment, and two American pharmaceutical companies expect to have the required number of successive lots of vaccine produced under the safeguards specified by the National Institutes of Health by autumn of 1960.

"The question now remains whether the health authorities and physicians of the United States are ready to take the necessary steps for an attempted elimination of poliomyelitis from the country before the summer of 1961 or whether the country will continue to pay the high current price for only partial prevention of the paralytic disease?"

The Public Health Service has delayed licensing the Sabin vaccine pending "evidence of safety and lack of significant reversion to virulence," according to a statement by Surgeon General Leroy Burney last December.

Since the Sabin vaccine is produced from live virus strains that are weakened until harmless, it was feared that the viruses might regain their power to cause the disease after the vaccine is administered.

In this connection, Dr. Sabin cited fields tests in Estonia and Lithuania as "the best obtainable field experience not only on the safety of the vaccines used but also on their effectiveness in the elimination of paralytic poliomyelitis."

In these field trials, he said, vaccination of 50 to 60 per cent of the most susceptible age groups was completed before the summer of 1959.

The naturally occurring polioviruses in the unvaccinated group as well as those emanating from the hundreds of thousands of susceptible persons infected by contact with the vaccinated group had an opportunity to spread during the summer period when there has always been an increase in the number of polio cases, he said.

A thorough followup of the results of the vaccination program showed an absence of the summer increase as well as an "unprecedented reduction in the incidence of poliomyelitis in the entire population" of the two republics, he said.

Dr. Sabin said these field trials were "a reasonable basis for the attempt to eliminate completely paralytic poliomyelitis and its causative viruses by feeding the vaccine to almost all susceptibles in a population."

Such an eradication program has been carried out in Hungary where almost all children from two months to 14 years of age have been vaccinated, he said, and similar programs are now in progress in Russia and Czechoslovakia.

"In order to rob the naturally occurring paralytogenic polio viruses (viruses that cause paralytic polio) of the soil on which they grow, it would be necessary, in a country like the U.S.A., to feed the oral vaccine within a relatively short period of time during the winter and spring months to most preschool and school-age children, regardless of the number of doses of Salk vaccine they might have had," Dr. Sabin said.

"The relative cheapness of the oral vaccine and the ease of its administration should permit community-wide programs that would make the vaccine available to all without reference to ability to pay. This would provide a means of protecting not only the individual but also the community."

BOOK REVIEWS

A Practical Guide to General Surgical Management; by Julian A. Sterling, M. D., New York, N. Y., Vantage Press, 1959, pp. 67. Price $3.00.

In this concise manual, Dr. Sterling has set down the working rules that have evolved over the past several years in the surgical service at the Albert Einstein Medical Center in Philadelphia. While this book is intended to help orient the interns and new residents, the rational approach to everyday hospital problems can be reviewed with great benefit by all physicians.

While the book has the obvious drawbacks of dogmatism imposed by brevity and certain rules

that have only a local application, I believe this book would be a worthwhile investment for all hospitals. Certainly if all interns and residents were furnished a copy and referred to this manual our patients would receive better care and all hospitals would function much more efficiently.

ROBERT F. RYAN, M. D.

I Prescribe Laughter; by Thomas Ridhard Rees, M. D., New York, Vantage Press, 1960, pp. 111. Price $2.75.

This is a book of jokes, limericks and amusing slips of the pen apparently culled from many sources. There are no cartoons. It should do in the waiting room and might serve as a source to spice up your staff meeting remarks.

NORMAN C. WOODY, M. D.

Nutritional Diagnosis; by Grace A. Goldsmith, M. D., Springfield, Ill., Charles C Thomas, 1959, pp. 180. Price $5.50.

This book, one of the American Lecture Series, deserves a place on the shelf of every physician and medical student. The diagnosis of nutritional disease is discussed in the lucid, straightforward manner for which Dr. Goldsmith has become noted in her other scientific publications in the past. Sections are devoted to caloric, protein, carbohydrate lipid, mineral and vitamin nutrition. These are preceded by a section on general observations which furnishes an excellent guide to history taking, physical examination, dietary evaluation, and laboratory procedures used in nutritional diagnosis.

The text is supplemented by excellent tables and figures, and a complete and definitive bibliography of one hundred and sixty references. In comparison with other publications in this field, brevity with completeness and clarity of presentation recommend this volume highly.

WALTER G. UNGLAUB, M. D.

The Story of Dissection; by Jack Kevorkian, M. D., New York, Philosophical Library, pp. xii (not numbered) + 80, ill. 16. Price $3.75.

The jacket blurb describes this little book ineptly: "An enthralling account of the often weird and peculiar methods used in dissection of the animal and human body from antiquity to the days of Puritanism, together with the various taboos and superstitions connected with such enterprises." The book is not enthralling, it deals hardly at all with methods of dissection, and its coverage extends to the 20th century; but the account does touch upon taboos and superstitions associated with the dead human body. The author's purpose, as stated in the *Introduction*, was to trace the evolution of attitudes toward dissection in company with the history of views of human values, of superstitions, and of philosophy. In the brief concluding chapter he writes: "We have traced the thread of human dissection through the fabric of history in a crude fashion. In the course of this journey we tried to unravel the multifarious fibrils which make up the thread, which through a qualitative diversity at each locus produced the nuances of continuity so lucidly displayed." To this reviewer, the "thread" and its "fibrils" appear through the overlay of wordage only obscurely and in a tangle.

HAROLD CUMMINS, Ph. D.

Current Therapy—1960; by Howard F. Conn, M. D. (ed.), Philadelphia, Pennsylvania, W. B. Saunders, Co., 1960, pp. 808. Price $12.00.

The 1960 edition of *Current Therapy*, edited by Dr. Conn with 12 consulting editors and many contributors continues to fill its stated need for "information in a form consistent with ready reference and practical application" in the field of Therapeutics.

Therapy in the fields of Cardiovascular Disease, Obstetrics and Gynecology, Allergy, Metabolism and Nutrition, Urogenital Tract Diseases, Dermatology and Syphilology, Infectious Diseases, Nervous and Mental Diseases, Gastroenterology, Respiratroy Tract Diseases, Hematology and Endocrinology is very well covered.

NORMAN S. GILBERT, M. D.

PUBLICATIONS RECEIVED

Landsberger Medical Books, Inc., N. Y.: Cardiac Emergencies and Related Disorders; Their Mechanism, Recognition and Management, by Harold D. Levine, M. D.

Lange Medical Publications, Los Altos, Calif.: Review of Medical Microbiology, by Ernest Jawetz, M. D. (4th edit.); Handbook of Medical Treatment, edited by Milton J. Chatton, M. D., Sheldon Margen, M. D., and Henry Brainerd, M. D. (7th edit.).

The C. V. Mosby, Co., St. Louis: Synopsis of Pathology, by W. A. D. Anderson, M. D. (5th edit.).

W. B. Saunders Co., Phila.: Obstetrics, from the original text of Joseph B. De Lee, M. D., by J. P. Greenhill, M. D. (12th edit.).

Charles C Thomas, Publisher, Springfield, Ill.: Chemical Osteosynthesis in Orthopaedic Surgery, by Michael P. Mandarino, M. D.; The Pharmacology of Anesthetic Drugs, by John Adriani, M. D. (4th edit.).

John Wright & Sons Ltd., Bristol, Eng.; The Modern Treatment of Asthma With Special Reference to Gold Therapy, by L. Banszky, M. D. (2nd edit.).